B 338150

WOOD

Combined With

WOOD PRODUCTS

DEC -7 1951

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JAN 25 1952

Copy

December, 1951

Hardwood's Veach

See Page 21 — WOOD SALUTES

Lumber Grading

Pacific Lumber's grading operation, just a part of the steps in getting the proper lumber to the customer. See page 24.

Carbide Saw Costs

C. E. Drake shows how to figure costs of carbide operations on page 26.

Plywood Trailer

All set to regain wood markets on the highway is the new *Unicel* trailer on page 23.

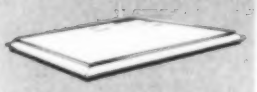
See These Features

- Utilizing Veneer Waste
- Connor Plants Profits
- Adhesive Diagnosis
- When to Replace Equipment
- Container Performance Standards
- Foreign Woods
- Trends
- Markets
- Patent Digest

A Vance Publication

The National Management and News Magazine of the Forest Products Industry.

You, too, can Cut Shaping Costs with WHITNEY *Automatic* SHAPERS



Note the square corners on this mahogany veneer, built-up television cabinet top shaped on Whitney Automatic.

Assembled tackle blocks shaped at a high production rate on Whitney Automatic.

This 5-ply chair is edge-shaped after bending, on a Whitney Automatic.

Use of Whitney Automatic to shape this toy rifle stock improved the product, increased production and eliminated sanding.

The cost of this kiddie-kar seat has been sharply reduced by shaping it on a Whitney Automatic.

Ends of child's sweeper accurately shaped on Whitney Automatic four times faster than by hand.

If you shape pieces like these, you, too, can shape them better and faster on Whitney Automatic Shapers. The work will be smooth, accurate and uniform, eliminating sanding operations in many instances. From novelty pieces to cabinet work, from brush backs to table tops—most any work that is hand-shaped in quantity can be shaped at a lower cost on Whitney Automatics. Investigate Whitney Automatic Shapers for your production jobs. Send for full information. Ask for Automatic Shaper Bulletin M12

Whitney Double Spindle Automatic Shaper with **direct motor driven spindles.** Also available with **motor driven belted** spindles and in **Single Spindle Models.**

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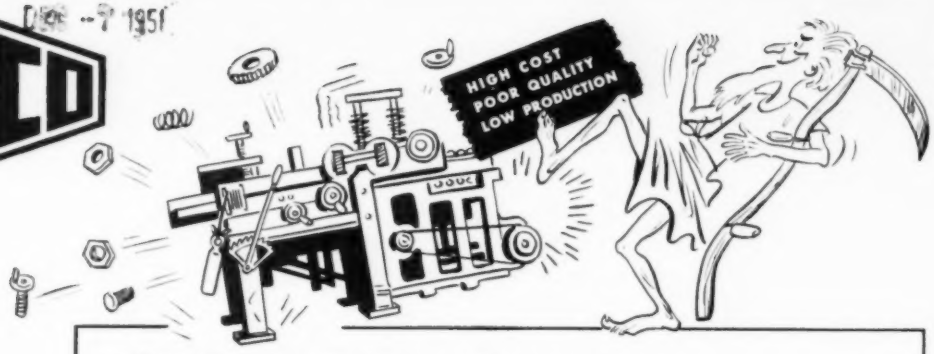

KICK OUT THE OLD... Bring in the New!

INSTALL AN

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HI-SPEED MOULDER

IN YOUR PLANT

1952 is a good year to bring your moulding machinery *up-to-date*. Make it a real Happy New Year for yourself, your employees, and your customers. An ECCo Hi-Speed Moulder will bring better results all around — lower costs for you, easier production for your employees, and better quality products for your customers. Father Time has done his best for you, but it is time now to kick out that old bag of bolts and hank of haywire — and let a boy that *CAN* do a man's job step in. Let us give you our timely story of modern moulding . . .

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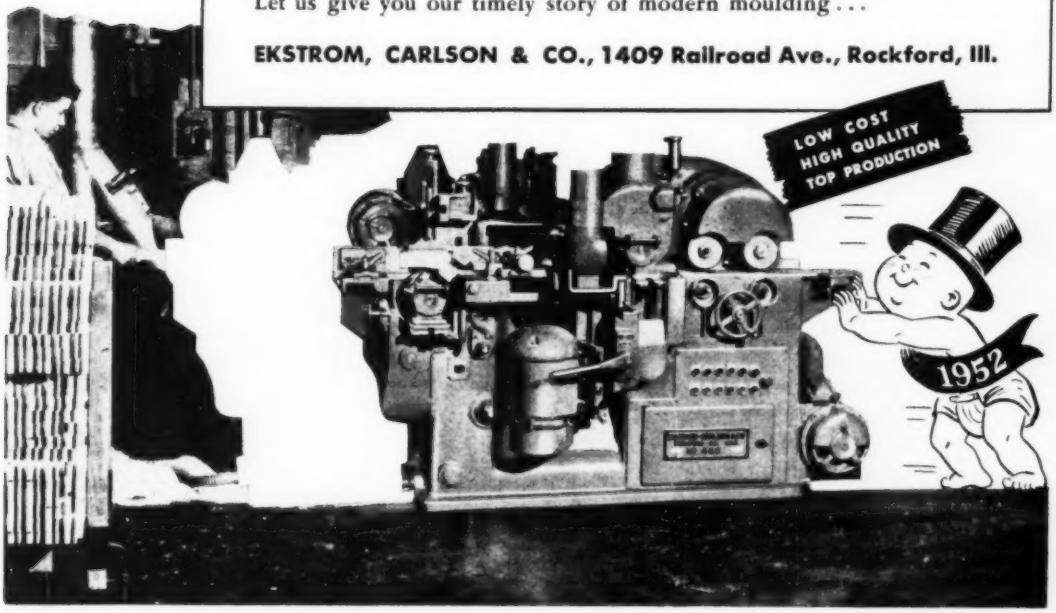

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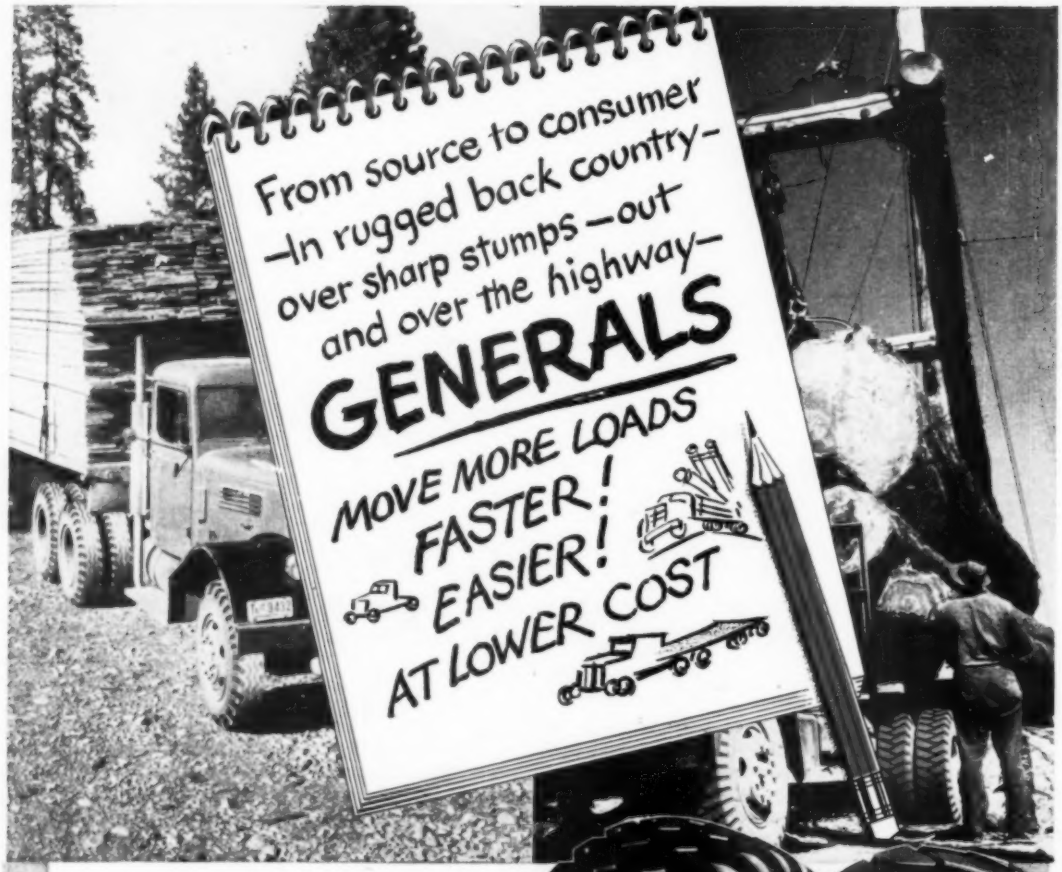

GENERAL H. C. T. Wide saw-tooth tread ribs and deep, sturdy shoulder cleats. Special shock-absorber construction prevents separation. More cords per inch for extra carcass strength. More original miles and more recap miles.

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THE GENERAL H.C.T.

THE GENERAL L.C.M.

SPECIFY GENERAL TIRES ON YOUR NEW EQUIPMENT

WOOD

COMBINED WITH

WOOD PRODUCTS

Volume 56 No. 12

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The gals of today aren't really so wild. Almost anyone can pet 'em.

• • •

Lots of big school systems have invested in audiometers, a gadget to test children's hearing. Be a lot cheaper just to whisper, "School's out."

• • •

The next best thing to Santa Claus is the MAUK Lumber Co.

You make up your mind. We'll make up your order—the best price for exactly what you want. That's MAUK's guaranteed year 'round Christmas gift to you. Remember the Mauk Lumber Co.

• • •

Simple Celia says she doesn't go for these ambitious young fellas. She was out with one the other night, a fella who started on a shoe string who worked his way up 'til she had to slap his face.

• • •

Heredity is what a man believes in until his son starts acting foolish.

• • •

Did you hear about the wife who shot her husband with a bow and arrow because she didn't want to wake the children?

• • •

MAUK Seattle Lumber Co.
Seattle 1, Washington

The C. A. Mauk Lumber Co.
Toledo, Ohio

Industry Trends

LUMBER

Shipments Below Production

Lumber supply exceeded demand during the second quarter of 1951, as mills continued to produce at the high levels of the first quarter, according to a U. S. Department of Commerce bulletin. Shipments, although showing an increase over the first quarter, were 7.5 percent below production, and new orders had fallen behind both production and shipments.

Current production is being maintained at slightly lower levels than in the second quarter. With a lessening of demand, a decreasing number of mills are operating overtime and very few mills are being placed in operation.

Douglas Fir Feels Car Shortage

For the first time this year, Douglas fir sawmills felt the pinch of a freight car shortage during the latter part of September, according to a report from the West Coast Lumbermen's Association. Lack of cars accounted for a drop off of about 2,500 cars of lumber shipped in September below August totals.

The shortage was felt most in Oregon and Northern California, where mills reported receiving at times only half their requirements. The supply is better now in both regions, although only about 80 percent of normal.

WOOD CONTAINERS

Announce Ceiling Prices

Dollars-and-cents ceiling prices on more than 100 standard sizes of wooden containers used in the marketing of farm products, was announced by the OPS.

The ceilings, prescribed in Ceiling Price Regulation 90, effective November 3, 1951, cover containers manufactured in 37 eastern, central and southern states and sold anywhere in the United States, territories and possessions. Containers manufactured in

(Continued on page 10)

MAHOGANY, too!

In Gamble Brothers' dimension parts production-line, mahogany goes hand in hand with Southern and Appalachian hardwoods. Gamble Brothers can furnish your solid or laminated mahogany parts, rough, or finished ready to assemble, made of fine Central American mahogany.

For over fifty years, Gamble Brothers' wood-engineering "know-how" has successfully solved production problems for manufacturers of fine mahogany furniture and other hardwood products. Let Gamble Brothers' knowledge and skill help you.

WRITE TODAY.

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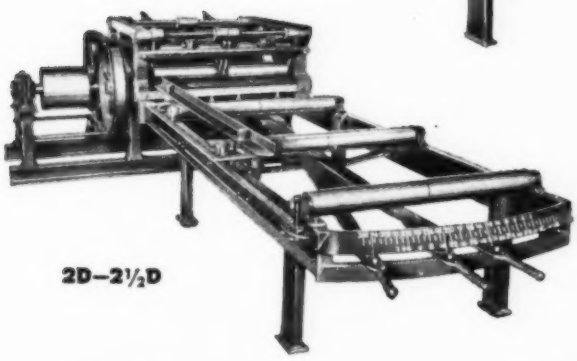
"Wheland ALL IRON AND STEEL CONSTRUCTION gives you truer cuts and more years of dependable, trouble-free operation."

OO-28

O-48



2D—2½D

OO-28 EDGER For portable and semi-portable mills. Iron and steel construction. Timken Roller Bearings on arbor and feed rolls. Strong, rigid—yet, easily portable.

O-48 EDGER For medium size mills cutting 15,000 to 30,000 board feet per day. Superior saw shifting device. Steel tables with ball bearing rolls. Alemite lubricated. Self-adjusting feed belt tightener. Many other high quality features.

2D—2½D EDGER For mills cutting 25,000 to 50,000 feet of lumber per day. Fast, accurate saw shift. All steel tables. Alemite lubricated. Roller and ball bearings throughout.

Wheland makes edgers of all sizes. 27, 36, 40, 48, 54, 62½, 68 and 73½ inch openings. Tell us your requirements, and we will send full particulars on edger best suited to your needs.

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your

MELURAC® resin adhesive

Exterior grade hardwood plywood for doors is given a stronger, more durable bond with MELURAC 300 (melamine-urea-formaldehyde). Here's how it opens the doors that lead to a *better* door:

durability

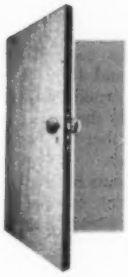
MELURAC 300 is a boil-resistant adhesive which is used to produce Commercial hardwood plywood meeting standards (Type I) CS-35-49 and MIL-P-66A. Important, too, is the fact that this resin adhesive assures a neutral glue line.

versatility

MELURAC 300 is ideal for either hot pressing flat and molded plywood, or for kiln curing of laminated lumber. It is non-staining and lends itself to long assembly . . . veneers spread with MELURAC 300 can be stored, under normal conditions, up to 5 weeks before pressing.

Let us help you unlock your pressing problems.
Fill in the coupon and mail it . . . today!

to better-bonded doors



faster cure time

A brand new catalyst, Hardener N-325, has been developed to cut glue-line cure time of MELURAC 300 by 30%. (Approximating cure rate of hot press Urea resin adhesives.)

We may be able to help you meet military specifications where plastics and resins are concerned. What's your problem?

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Please send me your recommendations for . . .

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- Cold-Pressing
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- Boil Resistance
- High-Moisture Resistance
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Company . . . . . .
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PLASTICS DEPARTMENT
38A Rockefeller Plaza, New York 20, N. Y.

In Canada: North American Cyanamid Limited, Royal Bank Building, Toronto, Ontario, Canada

TRENDS

(Continued from page 6)

the western states, where different conditions prevail, are not affected.

The prices apply to assembled and unassembled boxes, crates, trays, lugs, cups, hampers, baskets and carriers made entirely of wood, or partly of wood and solid fibre or corrugated board, customarily used for picking, handling, storing and shipping fresh fruits, vegetables and other farm products.

Prices established under the regulation (CPR-90) average a few percent higher than prices prevailing during the 1950 season.

Tight Cooperage

OPS order CPR-86 is issued controlling the price of whiskey, wine, food and chemical barrels and the cooperage stock from which they are made. The new ceilings became effective October 24, 1951, and apply to liquid-tight barrels and kegs made entirely or partially of wood staves and heading, and all finished and unfinished staves and heading, whether laminated, sawed, bucked, rived or split.

FURNITURE

Cautious Optimism Noted

There begins to appear an air of cautious optimism in the furniture industry, according to a recent report of Seidman & Seidman, Certified Public Accountants. This condition prevails as excess retail inventories are slowly being absorbed. The heartening sign is the continuation, though at a small pace, of the upward trend in orders which began last May after several months of steep decline.

A year ago in September, the scare buying was already diminishing. This year, the buying, while less spectacular, appears to be on a much sounder basis.

September orders, although 15 percent less in dollar amount than those taken in September 1950, were nevertheless the largest September dollar bookings ever recorded, except in 1949 and 1950. So far as bookings are concerned, the industry was at practically the same point, dollarwise, at September 30 as at the same date a year ago.

Shipments in September were down 10 percent compared with August, and 16 percent compared with September last year. For the nine months ended September 30, the 1951 shipments were still 8 percent ahead of 1950. Cancellations were nominal, and unfilled orders were down 1 percent at September 30, compared with the beginning of the month.

(Continued on page 14)

Is Your Wood Gluing Department a Production Bottleneck?

Now... discover

Thermatron

HIGH FREQUENCY GENERATORS AND EQUIPMENT

BOND WOOD PERMANENTLY IN A MATTER OF SECONDS!

THE OLD WAY at Royal Wood Products Co. Until the wood gluing department was streamlined by installation of THERMATRON equipment it retarded allover production. Two men worked on one assembly, which involved timetaking manual adjustment of clamps, including protective measures to eliminate clamp damage on expensive veneers.

THE NEW WAY! A battery of jigs each equipped with a 500 watt THERMATRON generator, at plant of Royal Wood Products Co. Machines bond wood assemblies in first step in manufacture of TV cabinets. Panels are firmly glued in 20 seconds and ready for next step immediately.

THERMATRON, product of a pioneer in the electronics industry, may revolutionize your wood gluing department just as it has recently done for Royal Wood Products Co., Brooklyn manufacturer of fine television cabinets.

THERMATRON High Frequency equipment sharply reduces unit production time, floor area and manpower needed . . . eliminates expensive clamps and most rejects. And, THERMATRON frequently permits construction that reduces the number of reinforcing blocks which only add dead weight and bulk!

Installations of THERMATRON generators and equipment are available under one contract and one responsibility, because Radio Receptor Co. designs and builds the required jigs and fixtures right in its own shop. In many cases the initial cost of THERMATRON equipment isn't much more than the investment in hand clamps it replaces.

For "non-headache" wood gluing outline your problems to us today. Our engineers will gladly make recommendations without obligation . . . And be sure to request our latest bulletin No. WW-9

Standard stock generators available from ½ KW to 6 KW output, operating on 110 or 220 Volt lines. Special units supplied for unusual applications.

*T. M. Reg. U. S. Pat. Off.

Thermatron division

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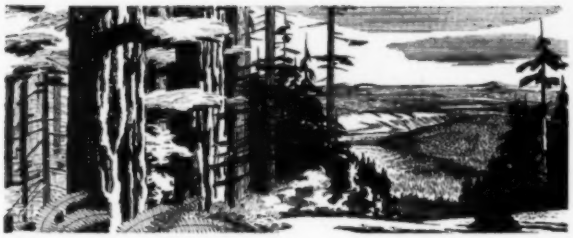
WOODICTIONARY

LONG BUTT

To cut a defective portion from a log, usualy from the butt. Syn.—Butt-off.

fine Oregon
Douglas fir



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fine plywood mills

plus

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equals

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The Douglas fir that grows in Oregon's rain belt is the finest on the face of the earth. That's why we use it.

The mills in which we make our plywood are models of efficiency in the industry.

The people who work with us are skilled, interested, productive—with pride in their jobs.

From these ingredients of materials, machines and men comes APMI plywood; exterior and interior panels that carry double marks of quality—the DFPA grademark and our own trademark.

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WORKS WELL

YIELDS WELL

FINISHES WELL

FINE FURNITURE

Long the choice of skilled craftsmen, Philippine Mahogany is again available in sufficient quantities to service the cabinet making and furniture industries. As always, the beautiful grain and figure of this fine tropical hardwood will appeal to the most discriminating furniture buyer.

The ability of Philippine Mahogany to take any type finish makes it an IDEAL WOOD for the manufacture of any type or style furniture. Write for colored brochure showing actual finishes, and the formulas used in their preparation.

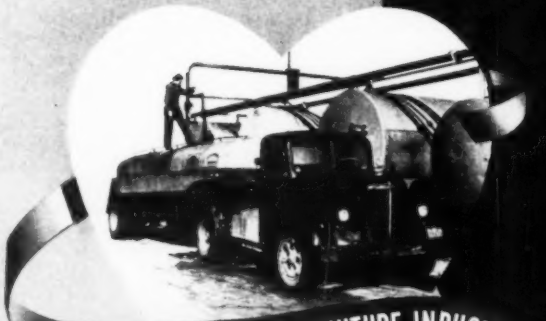
Philippine Mahogany Association, Inc.

Dept. W. 111 West Seventh Street, Los Angeles 14, California

Catalin

DEPENDABLE PRODUCERS OF QUALITY

RESIN GLUES



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FORDS, NEW JERSEY — EAST

CALUMET CITY, ILLINOIS — MID-WEST

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Quality Control Laboratories, working closely with the Catalin staffs, rigidly test the purity of all chemical ingredients before, during and after resin processing . . . thus maintaining finest standards for Quality and Uniformity.

SERVICE: Three modern, large capacity Catalin processing plants . . . strategically located in the heart of furniture, plywood and woodworking areas . . . are conducive to eminently satisfactory glue service. Deliveries are so prompt that Catalin customers do not need to carry large, on-hand inventories of resin glues.

TECHNICAL ASSISTANCE: The basic resins as developed and produced by Catalin, satisfy most wood glueing applications—with little or no modification. Where working conditions and product specifications demand special adhesive qualities, Catalin technicians will welcome the opportunity to compound special formulas and assist in determining production procedures for improved quality and efficiency. Inquiries invited!

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CATALIN CORPORATION OF AMERICA

ONE PARK AVENUE • NEW YORK 16, N. Y.

TRENDS

(Continued from page 10)

CONSTRUCTIONS

Dollar Volume Down

The downward trend in dollar volume of construction contracts awarded in the 37 states east of the Rockies, first evidenced in F. W. Dodge Corporation's August figures, continued its pattern during September.

The Dodge construction news and marketing executives revealed that the predicted over-all drop due to defense limitations on the building field showed itself in the September award total of $1,082,855,000 which was a decrease of 14 percent from August, and a drop of 16 percent from September 1950.

Meanwhile the nine-month 1951 total of awards reached $12,533,605,000 or 13 percent more than the comparable 1950 figure, and moved the year's huge total closer to last year's standing peak total of $14.5 billion.

MAKE "CLEAN" MORTISES

ON FAST SCHEDULES

WITH GREENLEE TOOLS

To make *accurate* mortises easily, swiftly and economically, equip with *high quality* GREENLEE Hollow Chisels and Bits. Long-lived and fast-clearing, these GREENLEE tools add speed to your production, *precision* finish to your products. GREENLEE Hollow Chisels and Bits are made by the originators of hollow chisel mortisers. And GREENLEE produces a complete line of these tools for hard or soft wood and all makes of machines. Write for new illustrated folder M-159 describing these and other GREENLEE tools for mortising, boring, and routing. Greenlee Tool Co., 2162 Herbert Avenue, Rockford, Illinois.

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CUTTERS • COUNTERSINKS • MAKERS OF TECO
GROOVING TOOLS FOR TIMBER CONSTRUCTION

PRODUCTION

Pulpwood

The South now produces 60 percent of the total yearly U. S. cut of pulpwood, and also leads all other regions in mill capacity needed to convert the raw wood into pulp, according to the Southern Forest Experiment Station, Forest Service, U. S. Department of Agriculture.

The South's 1950 pulpwood cut hit an all-time high of twelve and one-half million cords, thus topping by at least a million cords the previous record year of 1948. The total U. S. cut in 1950 was 21 million cords.

Twenty-six southern counties had cordwood cuts of over 60,000 cords apiece. Baldwin County, Alabama, led with 188,000 cords, all pine. The next four leading counties were Georgetown and Fairfield in South Carolina, Nassau in Florida, and Mobile in Alabama.

The report said that nine-tenths of the pulpwood being cut in the South is pine, but that the production of hardwood is increasing from year to year.

Sixty-one pulpmills are now in operation in the South. These mills can produce 22,800 tons of pulp per day. This is about half of the nation's total wood pulping capacity.

Louisiana's 8 mills lead the South with a total daily capacity of 4,000 tons. Georgia mills have a top output of 3,300 tons. Florida mills can produce 3,100 tons daily.

New mills are under construction at Eastport, Florida, and at Acme, Columbus County, North Carolina, and five additional mills are planned. These new mills, together with expansions to existing mills, are expected to raise daily southern mill capacity to 29,000 tons.

METAL SCRAP NEEDED

A very serious shortage exists that could slow down the production requirements of the huge defense program. Iron and steel is in very short supply, and everyone in the country *can* help the government by seeing to it that every bit of scrap is taken to a dealer. If no scrap dealer is in YOUR locality, telephone your nearest NPA field office and they will put you in touch with one. Don't delay. The need is extremely urgent. Do it TODAY!

Where big production—and big paychecks—depend on steady and regular going, that's where you'll depend on Disston. Lots of lightweight power is what's needed for day-in, day-out going in the big woods—and that's what the Disston Intermediate Saw gives you!

New!

LIGHTWEIGHT 9 HP DISSTON INTERMEDIATE CHAIN SAW that handles any woodcutting job!

Lay that DA-211 against a log, and let the chips fall where they may! It's a pleasure to feel those 9 horses bite evenly and steadily through the wood. Remember, too, you need no other saw than a Disston Intermediate for a complete all-round woods job.

HERE'S the power chain saw you've been waiting for—the new 9 hp, 2 cylinder Disston Intermediate Chain Saw, the DA-211. This rugged, dependable production tool will never wear you out. Its 9 big horses are capable of handling any woods job, yet its balanced light weight makes it easy to heft. It's made to deliver years of satisfying, trouble-free cutting power. That means it stays out of the shop and remains in the woods, where it belongs.

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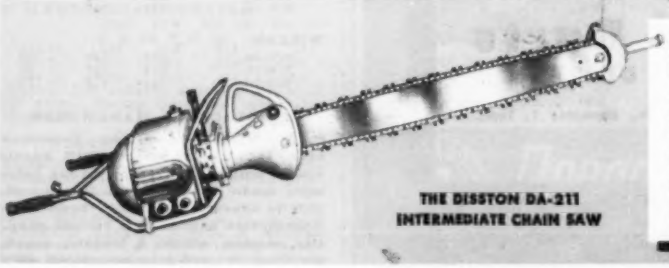
LOOK AT THESE GREAT MADE-TO-LAST FEATURES...

2 cylinders, 9 horsepower • Perfect balance—no vibration • Automatic clutch • Automatic chain oiler • Dependable float-feed carburetor • Simplified, positive controls • Self-rewinding starter • Rugged magnesium castings • Available with "L" or "C" chain • 2' to 7' (incl.) new narrow-profile slotted rails • Positive stop switch • Oversize fan for cool operation • Transmission swivels to any position—can be easily removed



THE DISSTON DA-211 INTERMEDIATE CHAIN SAW

Henry Disston & Sons, Inc. (Adv. Dept.)
Philadelphia 35, Pa., U.S.A.

Please send me information on the 9 hp DA-211 Disston Intermediate Chain Saw.

Name.....

Street.....

City..... State.....

18 L

MARKETS

These prices are estimates made available by Mr. George Land, publisher of the *Hardwood Market Report*, and reflect prices as indicated in his copyrighted issue of November 10, 1951. Mr. Land's complete report is available weekly; those who want the entire list should contact him c/o Box 5716, Memphis 4, Tenn.

SOUTHERN HARDWOODS

F.O.B. mills—Texas & Louisiana area—estimate of present FOB Texas & Louisiana mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on band-sawn Southern Hardwoods in carload quantities, random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M', on straight cars of upper bracket grades premiums are frequently being paid.

ASH—FIRM TEXTURE

	FAS	No. 1C	No. 2C
4/4-in.	155	108	62
6/4-in.	168	120	65
8/4-in.	180	140	70

BASSWOOD

4/4-in.	165	130	80
6/4-in.	170	135	87
8/4-in.	180	145	90

BEECH

4/4-in.	125	100	62
6/4-in.	150	112	67
8/4-in.	167	127	72

CHERRY

Same as Appalachian

RED GUM—PLAIN

4/4-in.	200	150	70
6/4-in.	230	170	75

RED GUM—QUARTERED

4/4-in.	225	175	75
6/4-in.	250	200	90
8/4-in.	260	210	95

SAP GUM—PLAIN

	FAS	No. 1C	No. 2C
4/4-in.	120	105	47
6/4-in.	155	135	
8/4-in.	160	140	

HACKBERRY

4/4-in.	110	90	65
6/4-in.	120	108	75
8/4-in.	135	110	75

HICKORY

Temporary suspended

MAGNOLIA

4/4-in.	170	135	75
6/4-in.	145	120	84
8/4-in.	205	150	87

SOFT MAPLE—WHAD

4/4-in.	130	110	67
6/4-in.	145	120	77
8/4-in.	155	125	80

SOFT MAPLE—WHND

4/4-in.	115	90	60
6/4-in.	130	105	75
8/4-in.	135	110	80

RED OAK—PLAIN

4/4-in.	180	105	63
6/4-in.	190	135	
8/4-in.	200	140	

WHITE OAK—PLAIN

4/4-in.	195	115	63
6/4-in.	195	140	
8/4-in.	205	145	

PECAN

	FAS	No. 1C	No. 2C
4/4-in.	114	94	48
6/4-in.	130	110	65
8/4-in.	155	130	70

POPLAR—PLAIN

			No. 2A
4/4-in.	170	120	75
6/4-in.	185	140	87
8/4-in.	205	150	90

SYCAMORE—PLAIN

			No. 2C
4/4-in.	117	97	60
6/4-in.	125	105	60

TUPELO—PLAIN
TUP TEXTURE—DEEP SWAMP

4/4-in.	120	105	47
6/4-in.	155	135	
8/4-in.	160	140	

WILLOW

4/4-in.	142	120	60
6/4-in.	142	122	67
8/4-in.	150	126	70

APPALACHIAN HARDWOODS

F.O.B. mills—Johnson City, Tennessee area—estimate of present FOB Appalachian mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade of band-sawn Appalachian hardwood in carload quantity, random widths & lengths, rough, air dried, & graded in accordance with

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a dependable supplier of
MACHINED WOOD PARTS?
BRUCE IS EQUIPPED TO SERVE YOU
Modern Woodworking Plants at Memphis and Little Rock have all latest types of equipment for precision production at quantity prices.
Five Bruce Sawmills are strategically located in Arkansas, Mississippi and Alabama to insure a constant, uniform supply of properly seasoned lumber in various species and grades.
25-year Experience assures manufacture according to specifications, and shipment on schedule. Leading users of wood parts throughout the nation can vouch for Bruce quality and service. Free technical and advisory service on request.
Send us your specifications or samples and we'll tell you what we can do for you.
BRUCE
Wood Parts
FURNITURE DIMENSION
E. L. BRUCE CO., 1616 Thomas St., Memphis 1, Tenn.

NHLA rules of inspection. Prices in dollars per M'. on straight cars of upper bracket grades, premiums are frequently being paid. Basis selected for the purpose of indicating transportation costs to principal consuming markets from Johnson City, Tennessee area.

TOUGH ASH	FAS	FIF	No. 1C	No. 2C
4/4-in.	160	150	110	67
6/4-in.	180	170	122	72
8/4-in.	190	180	147	85

BASSWOOD				No. 2A
4/4-in.	180	170	130	84
6/4-in.	190	180	137	94
8/4-in.	195	185	147	96

BEECH				No.2C
4/4-in.	145	135	110	75
6/4-in.	160	150	120	75
8/4-in.	170	160	130	80

BIRCH				
4/4-in.	205	195	140	80
6/4-in.	220	210	150	85
8/4-in.	230	220	155	90

BUCKEYE				
4/4-in.	135	125	100	65
6/4-in.	160	150	115	73
8/4-in.	165	155	120	78

CHERRY				
4/4-in.	200	190	135	80
6/4-in.	235	225	160	85
8/4-in.	250	240	170	90

CHESTNUT				
4/4-in.	165	...	115	60
6/4-in.	170	...	120	62
8/4-in.	175	...	125	62

HICKORY				
4/4-in.	125	115	78	53
6/4-in.	145	135	86	58
8/4-in.	165	155	90	60

HARD MAPLE				
4/4-in.	190	180	125	80
6/4-in.	200	190	135	84
8/4-in.	205	195	145	90

SOFT MAPLE				
4/4-in.	160	150	115	67
6/4-in.	170	160	125	69
8/4-in.	175	165	130	72

RED OAK—PLAIN	FAS	FIF	No. 1C	No. 2C
4/4-in.	185	175	120	
6/4-in.	200	190	135	
8/4-in.	215	205	145	

WHITE OAK—PLAIN				
4/4-in.	200	190	125	
6/4-in.	220	210	145	
8/4-in.	225	215	155	

WHITE OAK—WHND				
4/4-in.	115	105	85	..
6/4-in.	140	130	110	..
8/4-in.	150	140	115	..

YELLOW POPLAR—PLAIN				No. 2A
4/4-in.	210	200	140	85
6/4-in.	220	210	150	93
8/4-in.	230	220	160	..

POPLAR SQUARES	FAS	No. 1C & SD
4x4-in.	245	175
6x6-in.	280	190
8x8-in.	340	240

WALNUT—STEAM TREATED	FAS 6' & up	FIF 6' & up	No. 1C	No. 2C
4/4-in.	350	305	185	80
6/4-in.	370	325	210	95
8/4-in.	385	340	235	100

Walnut list reflects average fob mill, all areas. Basing point not generally observed.

NORTHERN HARDWOODS

Estimate of present FOB Wausau, Wisconsin mill point average ceiling price sales made subsequent to January 25, 1951 to consuming trade on band-sawn Northern hardwoods in carload quantities random widths & lengths, rough air dried & graded in accordance with NHLA rules on inspection. Prices in dollars per M'.* On straight cars of upper bracket grades, premiums are frequently being paid.

BROWN ASH	FAS	No. 1C	No. 2C
4/4-in.	145	105	73
6/4-in.	155	120	83
8/4-in.	160	130	88

BASSWOOD			
4/4-in.	130	125	78
6/4-in.	190	135	88
8/4-in.	195	145	96

BEECH			
4/4-in.	145	100	68
6/4-in	160	115	78
8/4-in.	165	120	80

BIRCH			
4/4-in.	265	145	80
6/4-in.	275	160	90
8/4-in.	280	175	100

ROCK ELM			
4/4-in.	135	115	65
6/4-in.	145	125	75
8/4-in.	150	135	80

SOFT ELM			
4/4-in.	125	105	71
6/4-in.	135	115	81
8/4-in.	140	120	86

HARD MAPLE			
4/4-in.	190	130	78
6/4-in.	200	140	81
8/4-in.	205	145	82

SOFT MAPLE			
4/4-in.	155	120	72
6/4-in.	170	130	82
8/4-in.	185	140	90

RED OAK			
4/4-in.	175	125	77
6/4-in.	185	145	82
8/4-in.	195	155	85

* Air dried Northern Hardwoods are no longer available and sales presently being made cover green stock or stock only partially seasoned. Orders are being placed for stock to be cut and shipped green when accumulated.

ACCURATE PRECISION GRINDING

WITH DEPENDABLE'S LOW-COST NO. 106-A

Illustrated with side-head grinding attachment, capacity up to 12" in diameter.

NEW PRECISION GAUGE . . . Equipped with Dependable's G-11 precision gauge. So easy to operate that even an inexperienced operator gets a perfect grind. Set-up takes only a few seconds. Because of accuracy, less knife surface is ground away on expensive knives. Saves you up to 50% of knife replacement costs.

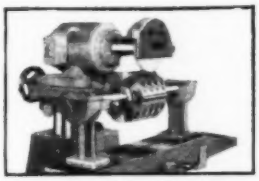
BALL-BEARING TABLE . . . Made to machine tool standards for ease of operation. 200 lb. table travels 20 inches and can be controlled by your little finger through a handwheel.

EASY ADJUSTMENTS . . . All adjustments reached from front, while grinding.

RUGGED CONSTRUCTION . . . Extra heavy castings eliminate vibration and give smooth operation.

FULL UNIVERSAL . . . Motor base assembly turret mounted to give 360 degree adjustment for straight or hollow grind. Full universal side head stand for grinding knives with any angle.

LOW IN PRICE . . . You'll be pleasantly surprised at the low cost of the Dependable No. 106-A.



MOULDER HEAD ATTACHMENT
For all types of moulder and profiler heads of slip-on type; Up to 12" in diameter and 15" long.

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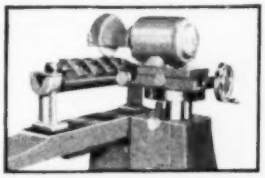

STRAIGHT KNIFE ATTACHMENT
For grinding thick and thin knives up to 20 inches long. Knife plate grooved for quick set-ups.

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PATENT DIGEST

by Royden C. Rinker

Wood Splitting

T. Stennitt U. S. 2,565,406, Aug. 21. A frame, a journalled shaft, a splitting member thereon, spring means for revolving the shaft, a wheel, a flexible strip connecting wheel to shaft and power means for operating.

Tree Tapping

L. Redenback. U. S. 2,566,464, Sept. 4. Portable tree tapping machine comprising a rotary drill.

Logging Apparatus

R. G. Larson. U. S. 2,566,616, Sept. 4. Logging attachment for a tractor having a lift mechanism comprising a semi-circular frame, an inverted U-shaped swivel yoke, and tongs having lower terminal hooks.

Wall Panel

G. W. Anderson (to U. S. Plywood Corp.) U. S. 2,566,649, Sept. 4. In a housing construction, a wall panel, a second wall panel, cooperating catch means attached to each of said panels, a frame of studs, and sills supporting said panels, a portion of said sills adjacent said panels, being scarfed from a corner of said frame for a short distance toward the adjacent corners whereby space is provided between said sills.

Chipper Knives

C. A. Johnson. U. S. 2,566,938, Sept. 4. In a wood chipper having a rotating knife which cooperates with a stationary bed knife for chipping wood and an inclined spout for feeding logs downwardly, the combination comprising a stationary base and a bed knife seat.

Plywood Shaping

W. E. Radig (to Bell and Howell) U. S. 2,567,122, Sept. 4. A plywood shaping apparatus comprising an inner form provided with a forming surface consisting of a succession of angularly related surface portions, a flexible tension member and outer form members.

Wood Treatment

C. Brynolf. U. S. 2,567,292, Sept. 11. Locally densifying the surface portion of a wooden article by preparing an oversized blank of the portion to be treated, steaming, contacting with cold impregnating solution, and heating under pressure.

Template

R. E. Werder. U. S. 2,567,586, Sept. 11. Layout template for assembling and nailing timers comprising an elongated angle iron, one flange provided with timber openings each of which is adapted to accommodate and seat an end portion of a coacting piece of timber and being provided on opposite sides of each opening with a pair of outstanding spaced parallel timber positioning and racking lugs.

Wood Plane

E. G. Simon. U. S. 2,567,739, Sept. 11. Wood plane and drawknife.

Filler Composition

E. R. Bush and J. E. Hanle (to Interchemical Corp.) U. S. 2,567,924, Sept. 18. Wood filler comprising pigment dispersed in oleoresinous varnish emulsion and a thermosetting resin.

Tissue Preservation

G. R. Fessenden, U. S. 2,567,929, Sept. 18. Preservation of plant tissues with solvent, non-oxidizing acid, chlorinated hydrocarbon, and a resin.

Drying Lumber

H. P. Wood. (to Wood Electro Process Co.) U. S. 2,567,983, Sept. 18. Drying lumber in a series of stages including gas drying and high frequency energy drying.

Fastening Prong

R. S. Wagner (to E. R. Wagner) U. S. 2,568,043, Sept. 18. Barbed prong for securing devices to wood.

Bowling Pins

R. E. Clark. U. S. 2,568,274, Sept. 18. A wooden bowling pin having a base channel and a channel band extending about the periphery at the region of impact injected with a resinous material.

Plane

S. Shaler. U. S. 2,568,665, Sept 18. A woodworking plane.

Wood Filler

L. Roon and W. T. Smith (to Interchemical Corp.) U. S. 2,568,765-6, Sept. 25. Filler for wood comprising dispersion of thermoset resin and pigment.

Wood Filler

W. K. Moffett and C. J. Welz (to duPont) U. S. 2,568,864, Sept. 25. Wood filler which dries to accept surface coats comprising pigment, drying oil, and alkyd resins.

Boat Hulls

R. M. Brown (to Penn Yan Boats, Inc.) U. S. 2,569,224, Sept. 25 Planking ribs with an inner layer of planking, marking, applying plastic over markings and applying outer layer of planking.

Resins

H. R. Fleck and G. B. E. Schueler. U. S. 2,569,301, Sept. 25, Thermo setting resins prepared by treating wallaba resin with furfural.

Mr. Albert Anderson, Plant Manager at

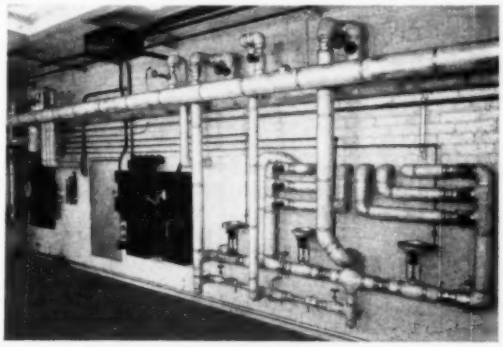
KNABB BARREL CORPORATION

5TH AND MARKET STREETS

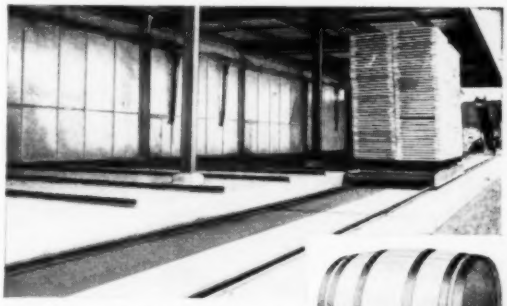
MARCUS HOOK, PA.

Says:

We think our set of 11 Standard Dry Kilns is the best in the Cooperage Industry.



View of Knabb Barrel Corporation's fine operating room, showing multi-zone automatic control installation.



Exterior view of Knabb Barrel's battery of Standard Dry Kilns. Expert planning of this installation assures maximum efficiency with minimum effort.

High quality materials, fine craftsmanship and careful drying, have made Knabb barrels world-famous.

Write for complete information now!

Manufacturers of Internal Fan Kilns

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Engineers and Manufacturers Since 1887

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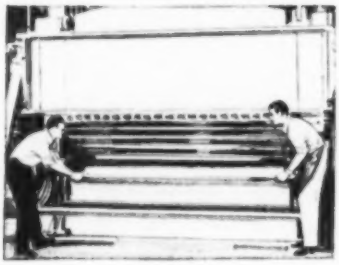
Borden's GLUE News

New glues and improvements in woodworking to help you speed production and cut costs



TROUBLE-SHOOTING CHART ON PLYWOOD

It's not always easy to find the reason for faulty gluing of hot-pressed plywood or furniture panels.

You can learn to spot the causes and cures if you use Borden's "Trouble-shooter" chart. Fully describes the "symptoms" to look for, also proper practice in storage, mixing, drying, selecting core stock and veneers, spreading, etc. Write for your free copy.

NEW, LOWER COST, ROOM-TEMPERATURE-SETTING, PHENOL RESORCIN RESIN GLUE

It's CASCOPHEN LT-68.

More economical because it uses less resorcin . . . yet meets Specification JAN-A-397 for a wood bond that's waterproof, boilproof, moldproof, heatproof. Storage life of over a year at 70 F.

It's also recommended for use with radio-frequency heating equipment. Tests at low density plate voltage of 2 KV and frequency of 8 MC show good bonds, even at 20 seconds, with wood failures up to 100 ...

Write for free Bulletin TD-31 for full details.

HOW TO EFFECTIVELY R/F EDGE-GLUE DENSE WOODS

Set up for these conditions: 1. A square, smooth joint. 2. Good conductivity of glue mix. 3. A time lapse, often 8 to 12 seconds, after application of pressure and before power goes on. It takes a few seconds for rams to pull dense wood surfaces into intimate contact. Heat applied too quickly causes partial precure or weak bond with little penetration. 4. Adequate curing time. Dense woods require almost complete cure as compared to about 60% cure with low density woods.

HOW TO EFFECTIVELY GLUE MASONITE

Large areas of Masonite can generally be bonded satisfactorily with any type of water-base glue (casein, urea resin, resorcin, etc.), using ordinary wood-gluing techniques. In some instances, however, where the Masonite is to be glued to relatively narrow wood frames and a critical bond with full fibre failure is required, these rules should be followed:

1. The pebbly "screened" surface should be sanded smooth for best results.

2. The hard, polished surface of "tempered" boards should not be glued without sanding, unless a solvent is added to the glue. (Five parts of Ethylene Glycol added to 100 parts CASCOPHEN RS-216 and 20 parts Catalyst FM-60M does an excellent job on unsanded, polished "Presdwood" surfaces. Other types of adhesives might also be used in the same way or following wiping of the Masonite surface with the solvent.)

THERE ARE PROFITS IN WOOD WASTE

With a source of suitable wood waste, the right equipment and the right type of synthetic-resin binders, it is possible to make many types of products now made of solid wood, such as core stock or the toilet seat above.

Borden literature provides a lot of helpful information at no charge. Simply write for these bulletins . . . "General Problems in Making and Marketing Wood-Waste Products", "How to Make Core Stock from Wood Chips", "How to Make Hardboard from Sawdust".

NEW, EASIER WAY TO BOND METAL TO WOOD

It's possible to obtain full strength metal-to-wood bonds that show high wood failure without double spreading or high curing temperatures . . . thanks to CASCO FLEXIBLE CEMENT NT-442.

With CASCO, and simple techniques, you can now get strong, water-resistant, metal-to-wood bonds with a single glue application; cold, intermediate or hot press; or with high frequency heating.

Cost is comparable to ordinary wood gluing, with only the usual equipment needed. Casket cases, sink tops, frozen food cases, truck bodies are all being made by these easier techniques.

Full data in bulletin, "The Bonding of Metal to Wood". Write for it.

Address any question on the above data, or any gluing problem to

Borden's
CHEMICAL DIVISION
Dept. W-121, 350 Madison Ave.,
New York 17, N.Y.

JOHN BEMIS VEATCH

CHARLES E. DEVLIN

EDWARD HUDSON LANE

Wood Salutes

With this issue, we are saluting three more top rank executives, each of whom is contributing his expert knowledge and experience in an important department of the forest products industries.

J. B. Veatch

John Bemis Veatch, president of the Hardwood Corporation and its associated companies: Bemis Hardwood Lumber Co.; Veatch-May-Wilson, Inc.; and Williams-Brownell, Inc., was graduated from Yale University with a B.A. degree in 1923.

He was associated with his father in the retail furniture and real estate business after graduation. He helped organize the Century Associates, Inc., a furniture buying group, and was Director and Secretary of the National Retail Furniture Association 1926-1935.

He was elected president of the Bemis Hardwood Lumber Co. in 1935. A director of the National Lumber Manufacturer's Association; Appalachian Hardwood Manufacturers, Inc.; and the National Hardwood Lumber Association; he has served in various executive capacities in all. He is a present trustee of the AFPI.

He worked with the Navy as Deputy Lumber Coordinator in charge of hardwood during World War II. Present defense activities include: Chairman, Hardwood Industry Defense Committee; O.P.S. Appalachian Hardwood Advisory Committee, chairman; Consultant to the Chief of Engineers, U. S. Army, on hardwood lumber buying; and member, Lumber Industry Advisory Committee, National Security Resources Board.

Charles E. Devlin

Charles E. Devlin is a native of Green Bay, Wisconsin, and was graduated from Beloit College with an AB degree. He followed his father's footsteps as a solicitor for the Milwaukee Road, then entered graduate school and received an MBA degree with distinction at Harvard School of Business Administration, majoring in sales management and advertising.

Devlin sold advertising on the Des Moines Reporter & Tribune after graduation. Later he moved to the promotion department of the same paper. A year doing advertising and circulation promotion for The Spokesman-Review in Spokane preceded his work on the staff of the Douglas Fir Plywood Association. For eight years Devlin served as Director of Advertising and Publicity of the organization, and in 1946 became Managing Director.

In 1949 Simpson Logging Company called him to become general sales manager, and in 1951 he was promoted to Vice-President in charge of sales, as which he has an opportunity to call on his experience in plywood sales and promotion and in addition oversees the sale and distribution of fir and hemlock lumber, fir doors, insulating board, acoustical tile, redwood lumber, baled asplund pulp and hardboard.

In addition to directing Simpson's sales, Devlin keeps abreast of industry affairs in the various trade associations to which his company belongs, serving on the Management Committee of the Plywood Association, as an officer of the Fir Door Institute, and on the Board of Directors of the Institute of Technology of Washington State College. Currently he is a member of the Advisory Committee on softwood plywood to the National Production Authority and the Office of Price Stabilization.

E. H. Lane

Mr. Lane was born at Newcastle, Virginia on July 4, 1891. He attended school at Fork Union Military Academy and Virginia Polytechnic Institute. He began his career in 1912 when he took over a small box factory at Altavista which his father, John E. Lane, a railroad contractor, had purchased at a bankruptcy sale.

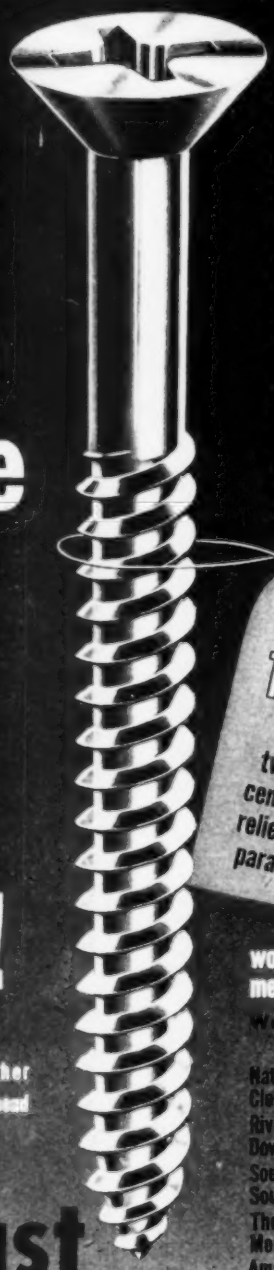
He proceeded to buy the machinery he needed on the longest possible credit terms, and started making a few cedar chests from Southern red cedar, of which Virginia then had a very good supply. In 1922, the company was reorganized and its name changed to The Lane Company, Inc. At the same time, research was started in the

(Continued on page 68)

The Double Thread Cuts the Time

in Half!

Can be furnished with either Slotted or Phillips recessed head



TWIN-fast

Reg. U. S. Pat. Off.
2,314,391 – 2,314,390 – 2,373,678
2,373,248 and 2,483,186

The Faster Driving . . . Cost Cutting Fastener

Save assembly time . . . . . get better fastenings with the TWIN-fast Screw's four exclusive advantages

1. Twin thread doubles the pitch . . . drives the screw twice as far for each turn of the driver.
2. Centered point helps make fast, straight start—no wobbling of screw, no displacement of parts.
3. Relieved shank eliminates "wedge action" and splitting—makes stronger fastening.
4. Parallel sides (no taper except at point) gives greater contact—often allows fewer or smaller screws.

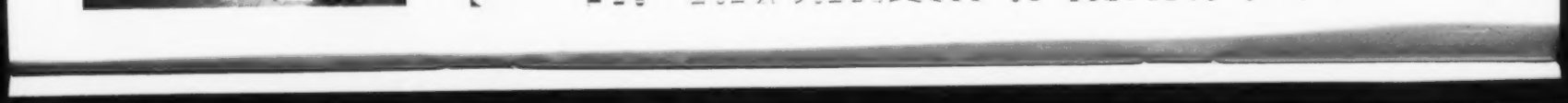
you can identify TWIN-fast Reg. U. S. Pat. Off. by its twin threads centered point relieved shank parallel sides

save TIME
save DRILLING
save SCREWS
save REJECTS

when assembling wood to wood, plastic to wood or metal to wood

Write for new TWIN-fast bulletin to any of these firms:

National Screw & Manufacturing Company
Cleveland, Ohio, and Los Angeles, Calif.
Rivce, Inc.
Downey, California
Southington Hardware Manufacturing Co.
Southington, Conn.
The Stowell Screw Co., Ltd.
Montreal, Canada
American Screw Company
Willimantic, Conn.
Blake & Johnson Company
Waterville 48, Conn.
Continental Screw Company
New Bedford, Mass.



FREIGHT CARS gave the PSC men . . . THE TRAILER idea which is also an all-plywood, monocoque unit.

The All-plywood Trailer Takes a Bow

The latest innovation in motor transport is the new, *Unicel* truck trailer. Built of stress skin plywood construction, this latest product of Pressed Steel Car Co. shows how wood can win back markets.

Traditional answers concerning lumber use problems leave a lot to be desired. It is not enough just to want lumber and wood used in the various spheres of American industry today. They have to be used in ways which will make them competitive with the other materials available. There has been a hue and cry for many years that wood is losing markets to steel, aluminum, and a variety of plastics. *Wood can't expect to hold markets unless the thinking of the men in the industry is broad enough to see that new approaches to the problem are necessary if wood is to compete.*

During the past several years the editorial staff of *WOOD combined with WOOD PRODUCTS* has been watching the developments in the research field with interest. Meeting upon meeting has been held all viewing with alarm wood's lost markets. A few voices in the wilderness have spoken to the effect—figure out a way to use wood in a competitive manner and you'll have a market, but don't expect a lingering loyalty to lumber.

That this idea is sound and can pay off in new products and profits has been demonstrated admirably by the recent developments of the Pressed Steel Car Co., Hedgewisch Division, manufacturers of the famed *Unicel* plywood freight and refrigerator railroad car. Here the trend was reversed somewhat, and these cars are being produced for use in the Near East on a production line basis.

October 22, 1951 marks another *Unicel* milestone. The scene was the annual American Trucking Association's meeting in Chicago. The innovation was the new *Unicel* truck trailer.

The adaptation of the monocoque construction principles from a railroad car to the truck trailer presented some interesting problems, but the inspiring note is that the company recognized the fact that a stress skin, plywood car could be adapted to the trucking industry needs. Test runs are already underway on the Eastern seaboard on the 32-ft. streamlined trailer, and the enthusiasm evidenced at the truckers' show, indicates that the company can guage a market.

Monocoque Construction

As described in the November 1950 issue of WOOD, the construction principle of the freight car incorporates a monocoque, stress skin plywood shell with an interior box girder construction. Thus, the interior between the plywood skins is cellular in nature and the logical name—*Unicel*, results.

Two skins of plywood are bonded to a framework of wood strips. The outside skin is ¾-in. plywood; the inside ⅝-in. Eight major panels—the bottom, top, two ends and four side sections are fabricated separately.

A number of molded, right angle laminated sections, made in various lengths are used to carry the stresses at right angles and tie the panels into a complete box. The freight car ends are made of laminated wood approximately 9-ft. by 9-ft. by 3⅝ in. thick. The plywood skins are carried over the car ends and are capped by the right angle laminates. The floor construction, surfaced with a hardboard decking, is basically the same monocoque girder construction.

Adapting the Principle to the Trailer

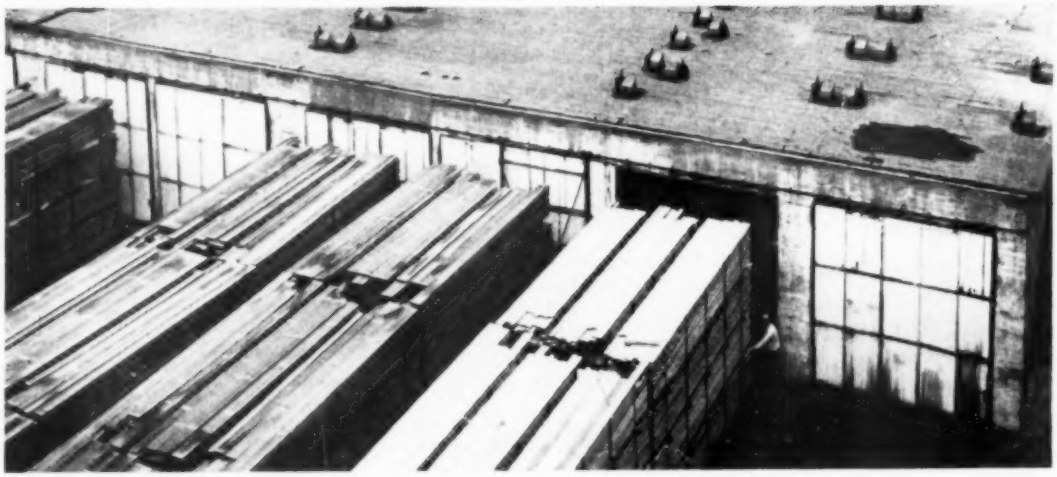
PSC men at the *Unicel* division developed the trailer from the experience gained with the freight car. The stressed skins-cellular girder principle is the same in both cases, but the stress problem is much more critical in the trailer. With the box car, the two ends make it possible to distribute the stresses evenly throughout the car. On the trailer, the open end for loading and unloading means that the door frame area is much more critical than in the freight car.

While train roadbeds often leave a lot to be desired from a sleeping passenger's viewpoint, they are much easier on car frames than the vertical shocks to which a trailer truck can be subjected on a highway. Admittedly, the impact shocks for the latter are not as great, but the vertical shock problem and the door frame problem were much tougher.

Built to the same 32-ft. by 8-ft. wide dimensions as standard tandem axle rigs now being used to haul a large share of the nation's goods over the highway, the *Unicel* trailer has several unique advantages which promise well for the new endeavor.

A clean undersurface, broken only by the tandem axle unit and the front landing gear units, means less wind

(Continued on page 52)



ORDERING KILN DRIED stock on the basis of range of moisture contents is best.

How to Buy Lumber Profitably

Part One of a two-part article on the methods to get the most from every lumber purchase as written by one of the Nation's leading authorities on wood identification and use.

by JOHN RENO
Industrial Engineer
Pacific Lumber Co.

This article is written for those lumber buyers who feel additional knowledge might assist them to do even better, and for others who are just learning the art of lumber buying.

The more a purchaser knows about the material he is buying (in this case, lumber,) the more intelligently he can buy—primarily for the benefit of his company, but also for the purpose of making his own job easier.

Let us consider some of the fundamentals of lumber buying—price talk comes later.

Probably the most common mistake made by lumber buyers is the use of grade names like "A No. 1," "No. 1 Best," "AA," etc., which have no legal meaning since there are no such grades in the lumber associations' grading rule booklets. Don't make up personal grade names. Much time and many procurement headaches will be saved if you will specify the grade you want, as listed and described in the grading rules for the species of woods to be purchased. These rule books are available to all purchasing agents. When buying standard grades protect yourself by including on the written order the provision, "This lumber to be graded in accordance with the rules and regulations of the ....." and insert the name of the association that writes the rules for the species being bought; for instance, The California Redwood Association for Redwood, the West Coast Bureau of Lumber Grades and Inspection for Douglas Fir, etc., etc. If lumber bought under this provision does not appear to be up to grade an association re-inspection can be demanded.

Grade Marking Rules

It is also within buyer's rights to stipulate that each piece of lumber be grade marked with the official stamp of the lumber association involved. This stipulation does not restrict purchases to association mills as any lumber manufacturer can obtain association grade-marking service from the lumber associations.

At first glance it seems superfluous to say that generally money is saved if one buys the lowest standard grade, as well as the narrowest and shortest lumber that will do the job in mind. However, a tour of our industrial users of lumber will disclose multitudinous concerns that buy, say, 3-in. by 12-in.–16-ft. Clear Heart (a hard-to-get and expensive item.) and subsequently saw it up into pieces 3-in. by 4-in.–4-ft., or other sizes which could have been easily purchased in the first place at much lower prices.

Of course many purchasing agents do not have the opportunity, time, or inclination to investigate requisitions from the factory, but if they can get this privilege, they might soon find themselves in the position of saving their companies a great deal of money. Often hard-to-get clear, long, and wide lumber is requisitioned when a few sound knots, or even loose ones, in the stock would have no practical detrimental effect on its utilization, or when short and/or narrow would serve the purpose satisfactorily.

The author's mill has two millwork customers, the lumber buyers of which vie with each other to purchase shorts in Redwood and Douglas Fir 1-in. by 3 in. to 12 in. wide by 2 ft. to 6 ft. long, for use in kitchen cabinets, window frames, etc. They save their concerns much money by purchasing this low-priced stock.

Get Help When Needed

A good buyer will not hesitate to get assistance from his factory man when preparing a schedule of lumber for purchase. Asking this assistance does not indicate ignorance; it is just showing good judgment. It is also an opportunity to get the factory man familiar with association grading rules. This, too, may be important as there are many grades from which to

choose, and deciding on the right one may save the company a lot of money. Likewise, goodwill between office and factory often results from such consultations properly handled.

Salesmen Can Help

Another practice that has been found helpful is to let the lumber salesman visit the factory man. Often when they discuss the purpose for which the lumber is to be used they can decide on just the right association grade for the job and thus save a lot of time for the purchasing agent who then merely needs to get competitive bids. This practice is particularly valuable when a buyer has gotten to know a salesman or two in whom experience has shown he can place well-founded confidence.

Nominal Sizes

Also, lumber buyers should know that nominal lumber sizes such as 1-in. by 6-in., 2-in. by 4-in., etc., are merely name sizes in most species and that lumber received practically never is of these dimensions. A 2 by 4 may have been two in. by four in. or maybe more when first sawed green, but it soon begins to shrink and generally has lost size in both dimensions before arriving at destination, even if bought rough green or rough dry. However, it still is sold as a 2 by 4. If full nominal size dimensions must be had at time of utilization for some unusual reason, a special cutting at a usually exorbitant cost must be made. Grading rule books show guaranteed thicknesses and widths of all nominal sizes in both rough and surfaced lumber. Next it should be emphasized that the use of standard sizes as listed in the rule books will save much money. For instance, a required finished width of 6 in. or 6⅝ in. will necessitate that 8-in. lumber be used and paid for in most species. Investigation may disclose the 6⅝ in. is not really needed in one piece—maybe 2 pieces 3 in. and 4 in. wide will do the job with less footage and also at a lower footage cost, or possibly a finished width of 5½ in. will do.

Lumber is generally sawed over length; that is, a piece of nominal 20-ft. length may actually be sawed 20 ft. 2 in. As normal lumber shrinks very little lengthwise, the piece may be pretty close to 20 ft. 2 in. long when received. However, a purchasing agent should protect himself by specifying "full length" or if desirable "double end trimmed to exact length."

Species Differences

The writer is glad he knew the difference between hardwoods and softwoods when he was buying lumber. In reality, some so-called softwoods like Southern Pine and Douglas Fir are a lot harder than some of the so-called hardwoods like poplar, basswood, etc. So if the factory superintendent wants to buy a schedule of hardwood lumber for some purpose where real hardness is necessary and he specifies a certain kind of wood which is not readily available, it will be helpful to you and your company if you know which other kinds of woods, broad-leaved or needle-leaved, have equal hardness, and which might be available and will serve the purpose satisfactorily. There is a government release available for a few cents from the Government Printing Office, Washington 25, D. C., known as Technical Bulletin No. 158, "Comparative Strength Properties of Woods Grown in the United States," which lists in Table I all American commercial softwoods and hardwoods, with a column showing their comparative hardness. It also gives comparative strength properties of the different woods, together with swelling and shrinkage figures.

Kiln Dried Ranges

In some cases you may be asked to buy dry lumber, in others green stock, or maybe moisture content will not be important. The grading rule books for some species define the terms "air dried" and "kiln dried" in terms of definite moisture contents; others do not. For the protection of your company your best bet is *always* to state on your inquiry and order the range of moisture content you will accept, such as, 5 percent to 10 percent or 12 percent to 18 percent at destination, or whatever figures will best suit the purposes for which the lumber is to be used. It is better to specify the range of moisture content instead of the average. The freight on dry lumber is less but this may be offset by the charge the mill makes for the cost of drying the lumber. For your guidance you can get without charge, from the Forest Products Laboratory, U. S. Dept. of Agriculture, Madison, Wisconsin, a copy of Report No. 1655, entitled "Moisture Content of Wood in Use." It recommends moisture contents for different items for various sections of the country. If the moisture content is the same there is no practical difference between properly air dried and properly kiln dried lumber. Of course lumber can be kiln dried to a lower moisture content.

REDWOOD ready for shipment showing grade markings

Decay Resistance

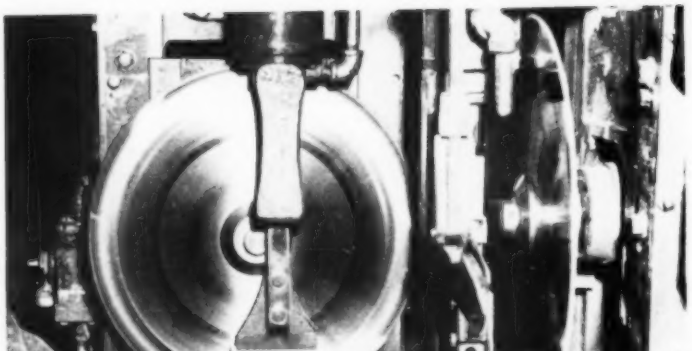
Maybe you will be asked to buy a quantity of a durable wood like Cedar, Cypress, or Redwood for use in a damp or wet location where non-durable woods will decay. If real resistance to decay is necessary be sure you specify the "heartwood" of whatever grade of durable wood you buy. Even in these species it is only the heartwood that resists decay. The sapwood of all species decays easily. The sapwood is the lighter-colored new wood directly under the bark of the tree and the heartwood is the older, darker-colored wood under the sapwood. Free to you for the asking, from the Forest Products Laboratory, is Technical Note. No. 229, entitled "Comparative Decay Resistance of Heartwood of Native Species," to help you select the proper wood for your needs. Non-durable woods treated with preservatives are sometimes utilized in place of the naturally durable woods. Good information on wood preservatives is contained in Reports R149 and R154, available free from the Forest Products Laboratory.

However, do not confuse decay resistance with strength. When buying lumber for use under dry conditions, both sapwood and heartwood can be allowed, as they are equally strong.

TO BE CONTINUED

KNOW-HOW PAYS

Every month WOOD combined with WOOD PRODUCTS brings you the leading authorities in the field of forest products to make your job of working with wood more profitable. Reprints of this article will be available.



Comparative Operating Costs of Carbide Tipped Saws

Part 1

This paper, presented at the November A.S.M.E. meeting in Atlantic City, gives some hard facts on carbide operation which merit real consideration.

by C. E. DRAKE
Drake Corporation

The purpose of this paper is to outline the factors involved in efficient and economical operation and maintenance of carbide tipped saws and certain fundamentals of new design, which are undeniably related to efficient saw operation and maintenance. It is also hoped that avenues for constructive discussion of this subject will be opened.

The work and observation by the author, over many years, has led to the conclusion that with the advent of carbide sawing, many of the generally accepted rules and principles of sawing must be rewritten. We need a "new book" on fundamental laws and standards governing sawing to match the requirements of this new field which is open to us.

The experiences of many woodworking plants with carbides have proven beyond doubt that better volume and quality work can be achieved at less cost, notwithstanding poor results which some firms have had. On the other hand, poor results often highlight the need for stabilized operational procedure.

The first problem is an economic one. The production engineer must weigh such matters as initial investment, methods and costs of maintenance and similar factors.

Carbide Costs

Carbide tipped tool cost can only be considered on the basis of production units or machine running time per sharpening. Therefore, the initial price of carbide tipped tools cannot be referred to as their "Cost".

There are two ways to acquire carbide tipped tools: (1) outright ownership of the tools and responsibility for their care and maintenance; (2) rental or leasing of required tools, the lessor assuming complete responsibility for maintenance. Under plan 1 the user may elect one of two methods of maintenance: (1) provide his own brazing and grinding equipment, materials, and competent operator to do the work; (2) have maintenance done by the tool manufacturer or by competent commercial shop.

Under the plan of ownership of tools and maintenance equipment, the items of cost are: investment in tools amortized over a proper period of time which will be the average life of that class of tool on a given operation; investment in brazing and grinding equipment and materials required; labor to perform maintenance.

Based on average operation and competent maintenance in large plants using quantities of carbide tipped saws for over five years, the average life of carbide tipped saws will be approximately six years. This may be used as a basis for amortization of the initial price of carbide circular saws.

Maintenance Needs

Maintenance equipment will include brazing facilities, either induction or torch, grinders, such as a universal tool and cutter grinder, or one made specifically for carbide tools. Other necessary equipment includes an anvil, gauges and small tools such as are usually found in the filing room.

Cost of this equipment will range from a minimum of $3,500.00 upward. Based on the above mentioned plants, the man-hour maintenance requirement for saws averages a fraction over nine man-hours annually per saw arbor operation. The average tip replacement on carbide circular saw blades based on the aforementioned operating records is 11 per cent annually of the total number of teeth in service. It is believed that this procedure and figures may be reliably used to estimate the operating costs of carbide tipped saws.

The figures and percentages quoted cover a total of 108 machines in such plants as planing mills, furniture factories, box factories, fixture manufacturers and others. The individual plant must be mindful of volume production as compared to intermittent sawing; type and condition of materials cut; condition of equipment on which saws operate; and number of machines equipped with carbide tools.

Leasing Plans

Under the rental or leasing plan, the lessor makes an engineering survey of the plant to determine the present operating conditions. A report is then submitted covering tool specifications, recommended machine modification, operation procedures and sharpening schedules. A contract covering monthly rental rate per machine per work day on saws actually

in operation, excluding spares, is provided.

Sufficient spares are furnished to efficiently operate the machine under normal operating conditions. A nominal deposit is required for each saw furnished. The deposit is to be returned to the customer on termination of the contract, less actual costs of any repairs needed to put returned tools in serviceable condition. All service work, including sharpening, replacement of teeth or replacement of the blade is included at no increase over the regular monthly rental rate. The user agrees to make any repairs or adjustments needed on machines to insure satisfactory operating conditions. In event of shut-downs of more than ten successive work days (two weeks) for any reason, the user will notify the lessor, giving date of shut-down, machines involved and date of resumption of operations. Upon receipt of this information, credit is issued for the work days lost. The contract may be terminated on thirty days' notice by either party.

Each saw and tool is furnished in a suitable light, strong, protective parcel post shipping container. The reversible cover is designed with name of user on one side and the lessor on the reverse side for easy and care-free return of tools for service.

These rental charges, based on the operating conditions in the user's plant, will average approximately 40 per cent of the costs, *for maintenance only*, of standard steel saws and cutters.

New Rules Needed

The characteristics of tungsten carbide are such that we can no longer be entirely governed by the rules of the past in sawing and cutting operations. One must investigate the many factors which will affect the results obtained in operating carbide tipped wood cutting saws. Arbor and rim speeds, material feeds, power requirements, rigidity of the machine base and the accuracy of the arbors, material hold downs and adjustments all exert considerable influence on the final results.

Saws made of best quality saw steel can be operated at 15,000 f.p.m., tooth travel and still give economic performance. It has been determined that tooth velocity of saws with tungsten carbide tips can be increased as much as 65 per cent and still deliver long production runs in cutting the same materials. It has been determined that at speeds in excess of 18,000 f.p.m., clean fibre severance can be achieved without feather edged

(Continued on page 38)

Photo—*Electrified Industries*

UNLOADING the seven opening press. Panels cure for several days.

How to Utilize Veneer Waste

Veneer waste is a valuable raw material at Swain Industries. Production has jumped to the spot where the company now hauls in waste from the outside.

Veneer and panel trimmings are being successfully utilized in the manufacture of chair backs and seats for the chrome dinette industry by Swain Industries, Inc. of Seymour, Indiana. The operation initially started using the veneer waste of its parent company, a manufacturer of face veneer, but soon required larger amounts of waste than was being produced by this veneer mill. The firm has been forced to haul from five to ten tons per day of dry veneer and panel trimmings from various plywood plants into Seymour.

The operation is basically similar to all other "dry-formed" wood waste boards. The veneer waste as received is run through a veneer hog and the panel trimmings through a lumber hog to reduce the material to a suitable size for handling. The wood is further processed by a hammermill and the resulting chips are passed over vibrating screens where the usable chips are separated from the fines.

Mix Method

The chips are then conveyed to a storage bin located over a batch type mixer. Predetermined amounts of chips and urea resin are mixed together. The treated chips are then deposited upon a canvas caul inside a metal frame to form the shape of the panels. After the chips have been compressed, the frame is removed and the canvas and its load of chips are placed between the heated platens of a 750 ton, 3' x 10', 7 opening hydraulic press. Stops are used to maintain uniform thickness of each panel. After the resin has been polymerized, the press is opened and the panels are removed. The chips are now solidly bonded together to form a panel conforming to the shape of the platen. These panels are solid stacked for several days to complete the cure and to allow them to cool before further manufacture.

Trim Panels

The panels must be trimmed to remove the feather edges to insure a solid edge. The panels are sawed to the desired length depending upon the wishes of the customer. Some manufacturers who have a variety of back sizes prefer to buy half sheets and cut them to their patterns, while others prefer to receive them cut to size.

Shaping to the patterns furnished by the various manufacturers of chrome dinettes is done on standard shapers. It has been found that in quantity production carbide tipped knives and saws are desirable. Flat panels for seats are handled in the same way as the curved panels.

Trimwood panels are made in a variety of thicknesses and densities to meet the specific requirements of the end use.

WHEEL removal at A&M garage.

WEEKLY maintenance check at A&M headquarters in front of the garage.

Saves 25% by Proper Tire Maintenance

Seven timely rules for increasing tire life have made it possible for the Anderson and Middleton Lumber Co., Aberdeen, Washington, to increase the tire mileage by 25%.

by P. O. ANDERSON

A combination of good planning and effective preventive maintenance is saving an Aberdeen, Wash., lumber and logging company 25 to 40 percent of the cost of tires for its logging trucks.

The Anderson and Middleton Lumber Co. of that city has been manufacturing lumber for 53 years, but only in the past two years has it been directly engaged in logging operations. It started with a fleet of ten GMC trucks and trailers and now has 12.

Careful Study Made

Upon entering the logging field, the firm made a careful analysis of all costs and decided that by having a fleet of one make of trucks, fitted out with proper tires, manufactured by one company, money could be saved. The lumber company had for a number of years been serviced by George Smith's General Tire Service plant at Aberdeen, so this company was selected to give service and preventive maintenance on the truck fleet tires.

"The advantage of having all tires of one manufacture on a fleet lies in the fact that they can be interchanged freely from one truck to another," says Smith, "and still maintain proper matching relationship.

"While tires of various manufacturers are listed in standard sizes, they are bound to vary slightly in overall dimensions. Using tires of one manufacturer gives a degree of uniformity that permits interchangeability, which, when coupled with proper service, greatly adds to maximum mileage.

"We go even farther, however, in that we have recommended to the Anderson and Middleton company that they use General's 10:00-20 12-ply H.C.T. (Highway-Construction-Transport), which is a dual-purpose tire. Truck tires are manufactured generally for two types of use: On-the-highway and off-the-highway. The Anderson and Middleton trucks travel 30 miles one way from the logging operation to the mill at Aberdeen.

"About 10 miles of this is off-highway driving over a gravel and rock logging road that develops a lot of washboard in dry weather. The balance is oiled highway. Since regular on-the-highway tires would not perform well over the logging road, and off-highway tires would wear excessively on the oil surface stretch, the H.C.T. type was specified," he concluded.

The Anderson and Middleton company is logging a virgin stand of Forest Service timber where butt logs up to 14 feet in diameter have been cut this year. Loads run to 7,000-8,000 board feet, which means a gross weight of 75,000 to 100,000 pounds on 18 tires.

The matter of preventive maintenance starts when the tires are first installed. Every tire is matched as it goes on the truck. Tires running on the outer edge of the road are inflated a few pounds more than those running on the inside to compensate for road crown. A service history of each tire, including the number of the truck, tire number, tire position, mileage and date put on is kept at the tire service office.

Constant Service

A service salesman checks over every piece of equipment each weekday and all day Saturday at the Middleton truck lot. Service trucks go to the lot each afternoon at 4:30 p.m. when the first logging truck rolls in. From then until 7:30 p.m., when the last truck arrives for the night, servicemen are kept busy checking air pressure, flats and mismatching.

The air pressure is kept at 75 pounds, flat or damaged tires are replaced and taken to the shop for repair, while mismatched tires are changed. A weekly service record is maintained of all major jobs that are to be done during the Saturday period.

On Saturday the same work is done, but in greater detail. In addition, worn tires are changed and replaced with recaps. With two years of maintenance operations behind them, service-

AIR PRESSURE check is the first item on the daily routine.

REMOVING a tire for matching

men find it now is routine to change a set of eight drivers each week, removing them for recap service and putting on a set previously recapped.

The policy of some logging truck operators to run their tires right down to the cord is not followed by Anderson and Middleton. It is possible to get 30,000 to 40,000 miles on a set of drivers, depending upon road conditions and the operator—but it is unwise from a safety or an economic standpoint.

The matter of safety is obvious, and by recapping when necessary, it is possible to save 25 to 40 percent of the original tire cost. Here is how it's done:

Cost Per Tire

Logging tires cost approximately $150 each today, so a company has $2,700 invested in tires for each of its trucks and trailers. If each tire is run to a maximum of, say 35,000 miles—which is about average—the tire cost per thousand miles is about $4.30. Recapping such a tire generally is not economical because cord usually has deteriorated from cuts and bruises and it is difficult to get a first class job of tread renewing on a tire run that far in logging service.

Early Recap Pays

It is better, and far more economical, to recap the tire when it has given from two-thirds to three-quarters of its total expected original tread mileage. The tire is removed at 20,000 or 25,000 miles and goes through the shop for retreading. The cost for this job is $54. The tire then is good for another 25,000 miles or more, and in 30 or 40 percent of the cases can be recapped a second time. Taking the two recap jobs into consideration an additional 50,000 miles or more can be run off most tires.

By recapping twice, a tire can be run 75,000 miles or more at a cost, on present day prices, of approximately $258. This figures out to $3.44 per thousand miles and better as compared to $4.30 per thousand miles when no recap service is used. A minimum savings of 25 percent is effected and this figure has run to 40 percent in the service company's experience.

Carcass Costly

Approximately 75 to 80 percent of the tire investment is in the carcass; if you lose it, you lose all. But if you recap at proper intervals you usually can get two retreads and occasionally three.

For service in the field the service company maintains six trucks completely equipped with air compressor, power wrenches, hand tools and other equipment needed to quickly change tire.

No Spares on Trucks

The Anderson and Middleton company does not equip its trucks with spare tires. The logging company has a field telephone in the logging area, at the scale house and at several points along the route. When a driver has a flat or notes a low tire he goes to the nearest field telephone and calls the service firm for a tire service truck.

The driver gives the number of his truck and position of the flat. The serviceman then looks at the maintenance chart to determine the type of tire that has gone flat, whether it has recap or original tread, then pulls down a spare that matches. It takes an average of 30 minutes to reach the logging truck and 15 minutes to change the tire. No repair work is done in the field. The damaged tire is returned to the shop where permanent repairs are made so the tire will stand up as well as if it had not been damaged. In practically every case the change is made fast enough so the truck does not lose a trip.

Anderson and Middleton company are not charged for this service trip. A standard charge is made for the repair, of course.

Sections not Boots

During the first few months the company engaged in logging a number of railroad spikes were picked up by the tires because part of the new road ran over an old railroad grade. It was necessary to make permanent section repairs in these tires and therefore their usefulness was extended to the normal tire life. Use of a temporary boot would seriously cut the life of the tire, since moisture would enter the break and rot the cord.

Tires are balanced when they are recapped. Ordinarily no other balancing is necessary, although it occasionally is done to the front wheel assembly.

Seven Keys to Economy

To sum up, here are some of the dos and don'ts for economical truck tire maintenance: 1. Select one make of tire of proper type for the entire fleet; 2. Select the type tire best fitted to road and load conditions; 3. Attempt to teach drivers to keep their speed within reasonable limits. High speed is a major factor in tire breakdown; 4. Do not overload; 5. Make permanent repairs to punctured and damaged tires immediately or your tire investment will be lost; 6. Organize a proper preventive maintenance program for your fleet; 7. Select an organization that has service facilities, personnel, and know-how to insure your company will get all the mileage out of a tire the manufacturer has built into it.

FORM APPROVED
BUDGET BUREAU NO. 44-R230

WSB FORM 100
JUL. 1951

WAGE STABILIZATION BOARD
PETITION FOR APPROVAL OF COMPENSATION ADJUSTMENT

DO NOT USE
CASE NAME AND CASE NO.
DATE
WSB NO.
DATE

GENERAL INFORMATION *(See instructions before answering)*

1. NAME OF EMPLOYER
A. B. C. Furniture MFG. Co.

2. ADDRESS OF ESTABLISHMENT *(No. Street, City, P.O. Zone, State)*
Chicago

3. MAIN OFFICE ADDRESS *(If different from Item 2 above)*
same as above

4. TYPE OF ESTABLISHMENT *(Factory, Mine, Wholesaler, etc.)*
Factory

5. IDENTIFY PRINCIPAL PRODUCT OR SERVICE
Bed Room Furniture

6a. IS THERE A RECOGNIZED OR CERTIFIED COLLECTIVE BARGAINING AGENT FOR EMPLOYEES COVERED BY PETITION *(Check one)*
[X] YES [ ] NO *(If YES fill in Item 6B)*

6b. NAME, ADDRESS AND AFFILIATION
AFL Local 1234

6c. IS A REPRESENTATION PETITION PENDING BEFORE THE NLRB OR SIMILAR STATE AGENCY? *(Check one)*
[ ] YES [X] NO

6d. IS A REPRESENTATION ELECTION OR ACTION OF THE NLRB OR SIMILAR STATE AGENCY? *(Check one)*
[ ] YES [X] NO

6e. IS AN UNFAIR LABOR PRACTICE COMPLAINT ISSUED BY THE NLRB OR SIMILAR STATE AGENCY, NOW PENDING? *(Check one)*
[ ] YES [X] NO

7a. TOTAL NO. OF EMPLOYEES ON PAYROLL OF ESTABLISHMENT
275

7b. TOTAL NO. OF EMPLOYEES AFFECTED BY PROPOSED ADJUSTMENT(S)
235

8. IS THIS A PETITION FOR A NEW PLANT? *(Check one)* IF YES ESTIMATE TOTAL NO. TO BE HIRED WHEN IN FULL OPERATION AND FILL IN ITEMS 10 AND 11.
[ ] YES [X] NO
TOTAL NUMBER

9a. WHAT IS THE PROPOSED EFFECTIVE DATE OF THESE ADJUSTMENT(S)? *(Month, day, year)* SEE INSTRUCTIONS
As Soon as Possible

9b. HAVE ANY OF THESE PROPOSED ADJUSTMENT(S) BEEN PUT INTO EFFECT? *(Check one)*
[ ] YES [X] NO *(If YES see instructions)*

10a. HAVE ANY PREVIOUS PETITIONS OR REPORTS OF WAGE OR SALARY ADJUSTMENT(S) BEEN FILED WITH THIS BOARD OR THE SALARY STABILIZATION BOARD? *(Check one)*
[ ] YES [X] NO *(If YES fill in Item 11)*

10b. HAVE YOU RECEIVED AN INTERPRETATION ON THE PERMISSIBILITY OF THE PROPOSED ADJUSTMENT(S) UNDER EXISTING GENERAL REGULATIONS? *(Check one)*
[ ] YES [X] NO *(If YES fill in Item 11)*

11. DATE OF PETITIONS, REPORTS, OR INTERPRETATION, NAME AND LOCATION OF OFFICE WHERE FILED

12. ARE YOU FILING OR DO YOU PLAN TO FILE A PETITION WITH THE SALARY STABILIZATION BOARD OR OTHER AGENCIES FOR SIMILAR OR RELATED INCREASES TO OTHER EMPLOYEES IN YOUR FIRM?
[X] YES [ ] NO

13. NO. OF SUPPLEMENTARY SHEETS ATTACHED TO THIS PETITION
3

14. PROPOSED TYPE(S) OF WAGE ADJUSTMENTS *(See instructions)*

	NUMBER OF EMPLOYEES IN UNIT(S)	CURRENT AVERAGE STRAIGHT TIME HOURLY EARNINGS	NUMBER EMPLOYEES AFFECTED	AVERAGE STRAIGHT TIME HOURLY EARNINGS OF EMPLOYEES AFFECTED	AVERAGE INCREASE REQUESTED IN CENTS PER HOUR
A. GENERAL INCREASE FOR ALL EMPLOYEES IN UNIT	UNIT 1.				
	UNIT 2.				
B. INCREASE FOR INDIVIDUAL EMPLOYEES	1.				
	2.				
C. JOB EVALUATION PLAN	1. 235	1.30	235	1.40	.10
	2.				
D. MERIT OR LENGTH OF SERVICE	1.				
	2.				
E. INCENTIVE OR PIECE RATE PLAN	1.				
	2.				
F. COMMISSION PLAN	1.				
	2.				
G. BONUSES *(Non-productive)*	1.				
	2.				

OVER

15. OTHER PROPOSED TYPE(S) OF ADJUSTMENTS IN COMPENSATION *(Check)*

	INTRODUCTION OF	MODIFICATION OF	FOR WSB USE		INTRODUCTION OF	MODIFICATION OF	FOR WSB USE
A. VACATION PLAN		X		O. SEVERANCE PLAN			
B. INSURANCE OR WELFARE PLAN				M. SHIFT DIFFERENTIAL			
C. PENSION PLAN		X		I. LUNCH PERIOD			
D. PROFIT-SHARING OR STOCK PURCHASE				J. SICK LEAVE			
E. HOLIDAY PLAN				K. CALL-IN OR REPORT PAY			
F. OVERTIME OR PENALTY PAY				L. OTHER *(Specify)*			

FOR LABOR ORGANIZATION
SIGNATURE
TITLE
DATE

FOR EMPLOYER
SIGNATURE
TITLE
DATE

What to Do Raises That

Wages are going up. Here's how your pay plan can be adjusted to meet the situation.

by J. S. WALTERS
President, Adams-Steele, Inc., Chicago, Ill.

Recent developments point to another round of wage increases to be granted to the metal trades and steel industry.

Official justification of the proposed increases will be pitched to the theme that retail price rises in recent months have cancelled any obligation on labor's part to accept wage stabilization in its present form.

Any over-the-ceiling wage boosts to the steel industry will sound the hunting horn for other unions. The woodworking industry cannot hope to sidestep these issues with small or token wage increases.

Wage and Salary Stabilization has been in effect now for over six months. The agencies are now "feeling their oats" with a whole new set of complicated rules on merit increases and cost of living changes.

Many rulings have been promulgated as to what industry may or may not do in granting wage increases.

The woodworking industry has not been fortunate to benefit from some of the most recent revisions—because with but few exceptions they (the wood working industry) were not included when special wage relief was being granted on account of manpower shortages and numerous other reasons.

It has therefore been necessary that the woodworking industry avail itself of the specific grants as specified in Regulations 5 and 6 as revised.

During the first three or four months after the enactment and effective date of Wage Stabilization, there were a general lack of uniform procedures in making applications for compensation adjustments.

With the appearance of WSB Form

About Wage Are Needed

100 much of the confusion and *mysticism* was removed.

Under present regulations all applications for approval of compensation adjustments are now prepared on WSB Form 100 with supplemental schedules and exhibits.

The petition itself is divided into two parts. The first part is a basic form which all petitioners are requested to complete regardless of the type of adjustment for which approval is wanted. The second part is a supplemental narrative statement.

A petition (two parts) must be used to make adjustments in wages, salaries and other forms of compensation which are not permissable without specific approval of the Wage Stabilization Board as specifically prescribed.

All petitions must be filed directly at the nearest office of the Wage and Hour Division, U. S. Department of Labor.

There are seven types of wage adjustments listed by the Wage Stabilization Board as most common classifications. These are listed under item 14 on WSB Form 100, viz.: A. General Increase for all employees in Unit. B. Increase for individual Employees. C. Job Evaluation Plan. D. Merit or Length of Service. E. Incentive or Piece Rate Plan. F. Commission Plan. G. Bonuses.

Introduction to or modification of eleven types of fringe benefits are listed under item 15 on WSB Form 100 page 2.

Forms, regulations and instructions have been provided by Wage Stabilization, however, an effective and tested procedure to expedite approval of multiple purpose allowable increases has not been developed.

The woodworking industry must continue to develop its own "modus operandi" to expedite approval of compensation adjustments.

Many woodworking plants with pay plans in effect designed to allow individual increases without prior approval under the new rules are filing unnecessary petitions for approval. Allowable increases to good-workers are frequently denied—resulting in loss

(Continued on page 52)

CONVEYOR moves units to finishing room. PLANTING for the future.

Connor Plants Profits

Connor Lumber and Land Co. is now using only second-growth timber. Here is the story of planting for profit as reported by AFPI's J. M. Rottier.

Wise woodland management and maximum utilization of all trees cut are basic doctrine in the business philosophy of the 75-year-old Connor Lumber and Land Co., of Laona, Wis., and Connorville, Mich.

One of the Nation's largest producers of hardwood lumber, the Connor company grows the trees it harvests. All operations of the firm's four plants in northern Wisconsin and Michigan are geared to the growth cycle of the company's nearly 100,000 acres of well-managed timberland. No more wood is cut each year than is added in new growth.

Since 1908, Connor operations have counted more on new growth forests than on virgin timber to supply logs needed for its mills. The late W. D. Connor, founder of the business, planted the first seedlings on company lands 43 years ago. Even then he planned, someday, to convert the company's operations to second growth timber.

That time is now at hand. This last summer, Connor loggers harvested the firm's last stand of virgin hardwood near the Laona plant. It was a routine, little noticed logging operation, for the founder's forestry program has developed according to well laid plans.

"The harvesting of the last virgin timber doesn't mean a thing," says Robert M. Kolbe, company forester, "except, perhaps, as a progressive landmark. The company," he adds, "can go on producing as long as the land can grow trees, for they cut no more than the land produces, forswearing the cut-out, get-out policies of a by-gone era."

Present heads of the company adhere closely to the long established Connor Lumber and Land Co. forest management policies. Their plants at Laona and Wausau, Wisconsin, and Connorville and Wakefield in the Upper Peninsula of Michigan, are well integrated and designed to use every stick of wood harvested.

Community conscious (they have set up school forests in all their areas), and still planting (50,000 seedlings this year), the company is in business to stay. They take their management theories from the American Tree Farm System, under which several of their timber tracts are certified. This means they cut no more wood than is grown every year, and that each stand is regularly "up-graded" to produce finer wood.

Uses of logs in Connor mills includes almost every last sliver of wood. Here's what happens; First long, straight pieces of lumber are sawed off, then shorter pieces are sawed for flooring or for lamination in tabletops or chairs seats. Leftover edgings become table or chair legs and spokes. Leftover chips and sawdust go for one of three possible uses: They can be used in making Connorboard, a new product developed by the company for sheathing, roofing and sub-flooring. Other scraps including sawdust, are ground into flour to become plastics or cattle feed. The rest—everything left—goes to the furnace to produce steam power to run the machines which produce the lumber.

JOINTS are put on with the tenoner.

H.F. cures the joints after gluing.

Finger-Jointing for Profit

Utilizing short lengths by the use of finger-jointing equipment as seen by a millwork manufacturer is presented as a sequel to the article in last month's issue. This story was presented at the Midwest FPRS Oshkosh meeting.

by F. E. BISSELL, JR.

Carr, Adams & Collier Co.

Stock woodwork has been made for many years from Shop or Factory Grades of Ponderosa pine, in about four popular thicknesses. In the course of manufacture, a great many short lengths are accumulated. Previously, the toy trade and furniture novelty manufacturers have been the outlet for this material, but now, with the advent of making long pieces out of short ones, the millwork firm can utilize this material.

The development of the finger-joint has been largely responsible for this. While this operation has been practiced in the box industry for a long time, it is a comparative newcomer to the millwork field.

Over ten years ago, the Weyerhaeuser organization did some experimenting with the stretching of dimension lumber. They developed a special machine for making, in endless process, end-jointed two by fours. A Forest Products Laboratory report tells in detail tests of the strength of this type dimension lumber, indicating that under a compression load, the finger-jointed two by four, though not as strong as a clear, straight grained piece, is stronger than a knotty piece, or a piece of cross-grain.

Since about 1934, Roach & Musser, Muscatine, Iowa, has used finger joints in its garage door cross rails. When the second World War came along, and Ponderosa pine Shop or Factory grade lumber was exceedingly scarce, other manufacturers began to explore the possibilities of using finger-jointed parts in their various products. One of the first efforts along this line was that of the Morgan Co., Oshkosh, Wis., which used the finger-joint rather extensively in various parts of the kitchen cabinet units. At the same time, the Wabash Screen Door Co. began to make storm sash with finger-joints in the stiles.

Commonest Sizes

It is noteworthy that the joints were first used in commonest sizes. It is obvious that these sizes would be the ones which would diminish fastest when accumulating cuttings from Factory Grade lumber. On the West coast, the Oregon Lumber Co., Baker, Ore., has done a rather extensive job of finger-jointing interior door jambs, cut-to-length trim and moulding products. This company offers what they call *John Day Economy Trim* allowing the use of finger joints and offered to the trade at a lower price than clear lumber.

Carr, Adams and Collier Co., Dubuque, Iowa, has done an extensive job of incorporating finger-jointed parts into various products. The company's *Bilt-Well* products, having finger jointed parts, include window and door frames, unit kitchen cabinets, corner cabinets, front entrance casings, barn sash, combination door sash and screen inserts, plain windows, and garage doors. In many cases, the product being offered to the consumer at a considerable saving as short lengths have no ready market, and consequently, are lower priced and could not be used at all had it not been for the finger-joint development.

If the finger-joint standard, the new National Woodwork Manufacturers Association Window Unit Standard—recently presented to the U.S. Department of Commerce, Bureau of Standards, is approved and made official, it will allow the use of finger-jointed parts in storm sash and screens used with standard weatherstripped window units.

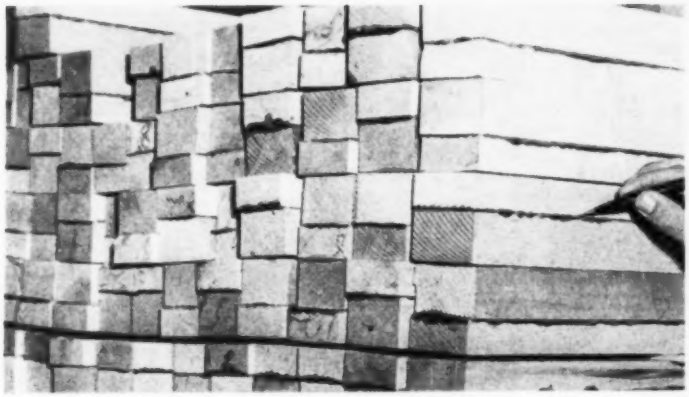
In 1949, when millwork became more plentiful, the market softened to some extent and there arose considerable resistance to finger-joints. It is doubtful if the consumer knew what they were or was interested in them. At that time, a price differential was established by some manufacturers which passed along the benefits and savings accomplished by the use of these joints. At least one manufacturer, Carr, Adams & Collier Co., guaranteed its finger-joints as to waterproof qualities. Some manufacturers had used inferior adhesives and failures were reported in the field.

Simplified Production

Little special equipment is necessary for finger-joint production. The joints are put on the ends of pieces in a double-end tenoner. When a very wide piece is to be so jointed, only one piece of cut stock is put in the tenoner per-feed-lug. Knives are available from both Yates-American Machine Co., and Wisconsin Knife Works both of Beloit, Wis.

One of the outstanding developments in this field has been the use of high frequency gluing for this work as done at the Dubuque firm. (For a complete story on this phase of the operation see WOOD, June 1950, Pages 25 and 48.)

It is the author's opinion, that it is to the advantage of the woodworking industry to promote and encourage the use and acceptance of finger-joints in parts as a means of keeping down the overall cost of wood products bearing in mind the competition from outside industries. The use of finger-joints, also is essential from the point of view of conservation, and will help assure a permanent supply of raw materials for the pine woodwork manufacturer.



Adhesive Complaint Diagnosis

Twelve reasons for faulty plywood from an adhesive standpoint as well as problems found in assembly gluing are presented herewith. Trouble-shooting production men might use this paper as a check-list when adhesive problems arise.

by C. F. MAC LAGAN
Borden Co., Chemical Div.

The following twelve general points are the most likely causes for substandard, or inferior, plywood. By this is meant plywood that requires little effort to separate the veneers at the glue-line, plywood characterized with spotty adhesion, blister, and generally weak glue lines:

1. The improper selection of adhesive for the specific construction, species or end use.

2. The improper moisture content of the veneer (a) too high, (b) too low, and (c) not sufficiently uniform for the adjacent plies being glued, for example two percent face, five percent crossband and 10 percent core. The author has witnessed some sad experiences in table top constructions where the panel was veneered with the core at too low a moisture content so that when the completed item had reached its destination there had been so much expansion in the lumber core that it protruded from the face and crossband to the extent of 1/16 of an inch, with the crossband-to-core glue line ruptured:

3. Non-uniform veneer thickness. This is especially applicable for multi-piece stock where unlike thicknesses are spliced, and it is frequently encountered. The results are that the areas where the thin veneers occur are either not bonded at all or the adhesion is very poor for lack of proper contact. This is frequently encountered in hot pressing.

4. Improper veneer temperature. (a) gluing hot veneers (too soon after removal from the dryer) causing pre-curing of the adhesive. (b) gluing too cold veneers (too soon after removal from extremely cold storage room) causing incomplete cure of the adhesive.

5. Poorly cut veneer, rough cut or wash-board surfaces, generally caused by a dull peeler knife, too high lathe speed or peeling before log is properly presoaked. Plywood of this type of veneer offers very poor glue-line strength even though an extra heavy spread of adhesive is employed (except for certain of the adhesives possessing "gap-filling" properties).

Poor Adhesive

6. Improper adhesive (or glue) mix. (a) inaccurate weighing of the ingredients, (b) mix prepared by inaccurate measuring of the ingredients (Preparing mixes "By Measure" is not recommended), (c) guessing at proportions, (d) foamy mix due to mixing at high speed, (e) lumpy mix and so on.

7. Improper spread of adhesive—(a) too light (insufficient), (b) too heavy (an excess of adhesive), (c) uneven (light in areas and normal or heavy in areas) generally caused by either spreader adjustment or spreader in need of repair such as regrooving of the spreading rolls, alignment of the rolls, etc.

8. Improper assembly time (a) too long for the type of adhesive being used causing pre-curing before pressure is applied, and (b) for certain adhesives, too short, causing inadequate penetration or drying of the adhesive before pressure is applied.

9. Improper temperature—for COLD-PRESS gluing (a) below the optimum temperature for the adhesive being used causing inadequate curing before the pressure is released and (b) too high in conjunction with the adhesive and assembly time being used, causing pre-curing. For HOT-PRESS gluing (a) improper platen temperature for the adhesive being used in combination with the pressing cycle, (b) fluctuation of platen temperature and (c) non-uniform platen temperature, either for the several platens if a multi-opening press is being used, which is the general rule, or for "cold-spots" on a single platen. These all cause incomplete cure of the adhesive and often result in loose spots, blisters (steam pockets) and a weak bond.

10. Improper pressure (a) inadequate for the type of construction, number of plies, thickness of plies and species being glued, thus providing poor contact of the mating surfaces and a spotty bond, and (b) unequal pressure over the entire area of the panel which may be caused by a faulty press or uneven veneer thickness, likewise providing non-uniform adhesion over the entire area of the panel. (In cold press gluing, the amount of pressure may be adequate but the retaining cauls may be faulty. There was an instance where a manufacturer was attempting to produce high grade plywood in fairly large dimension, and was obtaining excellent adhesion around the edges, but in the center, the panels showed evidence of inadequate pressure. The reason for this was found to be that the center areas of the retaining cauls had been compressed as much as ⅝ of an inch from their continued use on smaller-sized panels, thus not providing pressure at the center equal to that at the panel edges.)

Pressure Period

11. Improper pressure period—for COLD-PRESS gluing—too short for the particular glue-mix employed or prevailing temperature or species being glued, resulting in inadequate cure of the adhesive. For HOT-PRESS gluing (a) too short a pressing cycle for the adhesive mix, thickness of panel, distance to the deepest glue line or too short for the platen temperature employed resulting in incomplete cure of the adhesive, and (b) for certain adhesives (urea resins with very fast hardeners for example)

too long a pressing cycle causing over-curing or embrittlement of the glue lines.

12. Insufficient maturing period or "hot stacking" before handling, to permit adequate strength development of the adhesive to withstand the strains imposed by trimming, fabrication, etc.

The writer refers now to inferior glue joints in assembly gluing, laminating, edge gluing and the like. These operations are found in manufacturing furniture as well as the fabrication of structural members, building supplies (sash and doors), prefabricated house construction, etc. The causes can be divided into three groups.

Common Errors

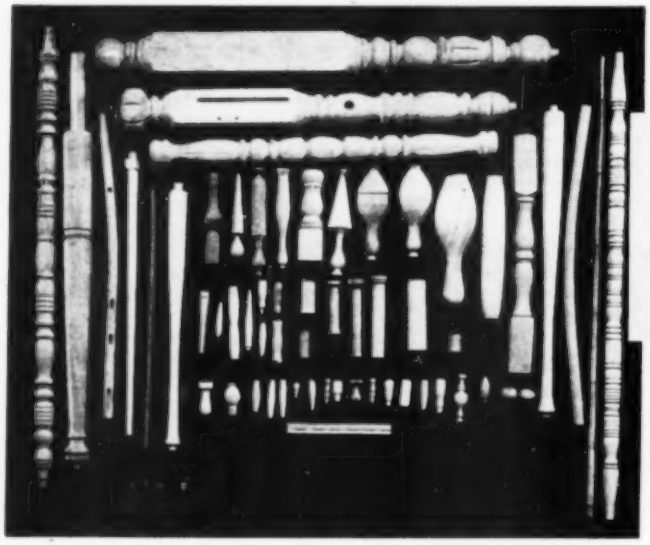
Common errors are attempts to glue stock that (a) has the wrong moisture content for the adhesive employed. Each type of adhesive produces optimum results at a specific moisture content range. Also, there is too great a variation in the moisture content of adjacent members setting up abnormal strains within the construction when the moisture content reaches equilibrium, (b) is badly warped with the result that joined members do not make intimate contact, (c) has unclean surfaces–are spotted with oil, grease, sealers, finishes or covered with dirt and dust, preventing proper bonding by the adhesive, (d) is too rough for the particular adhesive being employed, (e) is burnished from passing over a dull jointer or planer, (f) is case-hardened from improper kiln drying and (g) attempts to glue poorly fitting constructions with the improper adhesive. The remedies for each of these faults are obvious.

The most frequent error in this group is the improper selection of adhesive for the given job. The second is the improper preparation of the adhesive mix. The following may be the cause–(a) wrong proportions (either prepared "by guess", by incorrect measure methods or incorrect interpretation of directions), (b) foamy mix (caused by high speed mixing, failure to observe "rest period" in mixing directions, prolonged mixing, etc.), (c) lumpy mix caused by use of mixer revolving at too slow a speed or non-observance of proper mixing procedure), (d) improper temperature (it is very essential that the "glue man" heed the manufacturer's directions with respect to water temperature to obtain the proper adhesive mix) and (e) unclean equipment (certain adhesives are very sensitive to traces of alkaline or acidic material that may be present if the glue-mixing, handling and spreading equipment are not kept clean.) A third is the use of over-age mix which applies mainly to room-temperature setting adhesives and results in pre-curing before pressure is applied. As the glue-mix progresses toward the end of its "liquid or usable life", its permissible assembly time becomes shorter.

1. Improper spread of adhesive–too light an application (a very frequent practice to cut down glue cost), too heavy an application for certain adhesives or non-uniform spread. Frequent causes are the use of the improper means for application such as the use of a limber, bristled paint brush, a paddle, stick or rod, incorrect grooving and corrugations on the mechanical spreader, spreader not in good order and so on.

2. Improper assembly time, the lapse of time between spreading and pressing too long for the particular adhesive, too long for the prevailing temperature, too long for the species being glued and for the spread employed. (The latter is a very frequent practice) Too short an assembly time for certain adhesives on certain species, such as the gluing of dense stock with the durable types of room-temperature setting resins.

3. Improper pressure–inadequate



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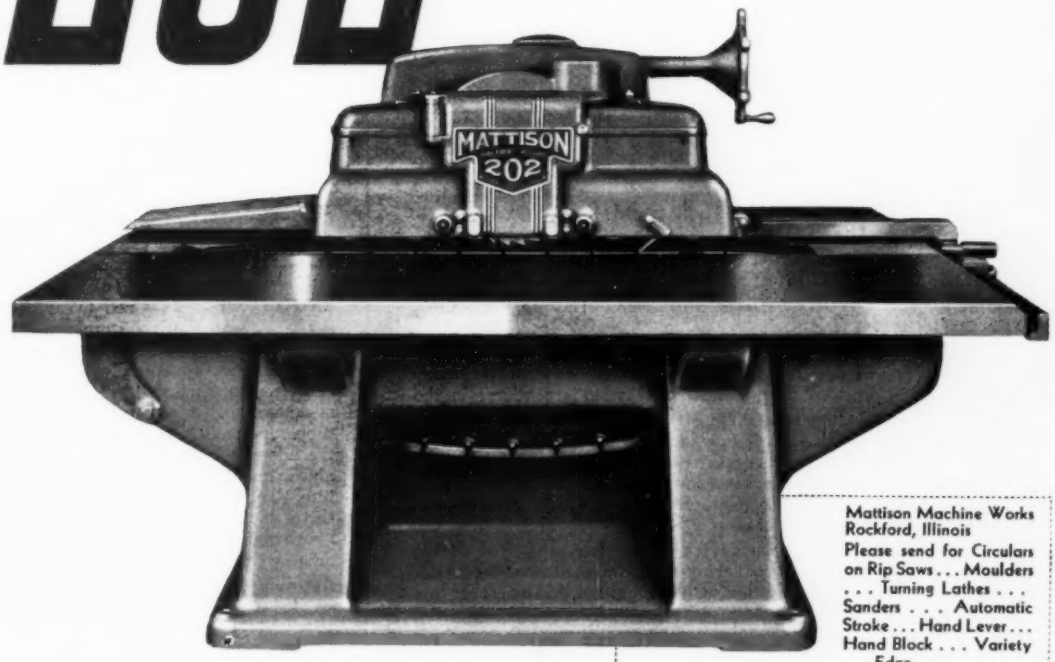

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for the particular adhesive employed or the construction being glued, unequal distribution of pressure and, for certain adhesives, excessive pressure resulting in a starved joint due to abnormal squeeze-out.

4. Improper pressure period—too short for the adhesive and prevailing temperature, too short for the type of construction and for the species being glued, resulting in the release of the pressure before the adhesive has properly cured.

5. Insufficient maturing time before handling, machining, finishing, etc. For certain adhesives it is desirable to machine as soon as possible after gluing since the glue lines are still "soft" and easy on the cutting tools. However, this should not be done before the strength of the bond has developed to a point where such treatment will not impair the incompletely cured glue line.

Following are specific illustrations of types of inferior adhesion commonly found and a possible approach to a diagnosis of the causes:

A glue joint possessing low strength and, when broken apart, showing a glue line honeycombed or crazed. The likely causes are: (a) insufficient pressure to bring the mating surfaces into proper contact, (b) improperly mating surfaces and the use of the wrong adhesive for such a condition, (c) foamy glue-mix causing the honeycombed appearance (especially true for a casein glue) and (d) excessive spread coupled with inadequate pressure and possibly too long an assembly period. This is likely when a conventional urea resin is used under these conditions.

Low Strength

A glue joint possessing low strength and, when broken apart, showing a glue line with a mottled surface area. The likely causes are: (a) too light a spread, resulting in a "starved joint" or insufficient adhesive to properly transfer to the mating surface, (b) too long an assembly period resulting in pre-curing of the adhesive before the application of the pressure and (c) inadequate pressure to bring the mating surfaces into intimate contact.

Looks Good

A glue joint possessing low strength, but when broken apart showing no visible evidence of faulty gluing. In an instance like this, it is well to check the following, as any one or a combination of factors might be responsible: (a) glue selection for the particular construction (Is the adhesive well suited to gluing the particular species involved?), (b) preparation of the adhesive mix (Were the manufacturer's directions followed in preparing the mix?), (c) moisture content of the stock glued (Was the stock at the proper moisture content for the adhesive used? Were the mating pieces at substantially the same moisture content?), (d) pressure period and room temperature (Was the proper pressure period employed for the adhesive used, the species being glued and the prevailing temperature?) and (e) maturing period (Was there an adequate lapse of time between gluing and testing to permit the adhesive to mature properly?) Frequently the required maturing period for a given adhesive is ignored and glued-up test specimens are sheared prematurely, resulting in substandard results and often the rejection of an entirely satisfactory adhesive for the job.

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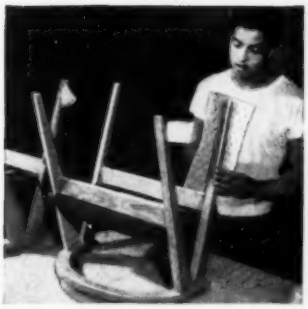
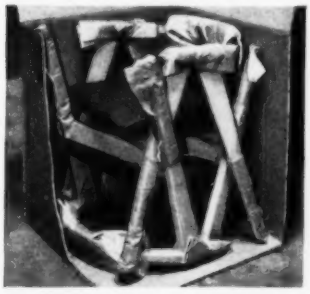
Because of these many advantages, countless manufacturers of not only furniture but many other products have switched to KIMPAK. For complete information and help regarding your particular packaging operation, see your nearest KIMPAK distributor listed in classified telephone directories under "Packing Materials" or "Packing Materials–Shipping"; or write to Kimberly-Clark Corporation, Neenah, Wisconsin.



1. 8" x 12" pads of KIMPAK are taped to exposed leg surfaces of chair.

2. A larger pad of KIMPAK is applied to back of chair.



3. Cut-away view of completed package –two chairs per container.

Captain's chair illustrated is a product of the Fernwood Furniture Company, Los Angeles, California.

Kimpak

REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

A Kimberly-Clark Crepe Wadding Product

PROTECTIVE CUSHIONING

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—— TWO FREE BOOKLETS! ——

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin W 1251

Please send me free, the following:

- ☐ Float Packaging booklet.
- ☐ Data File on Furniture Packaging under Consolidated Freight Classification.

Name .....

Address .....

City, Zone, State .....

Our product is .....

CARBIDE SAWS

(Continued from page 27)

or needle pointed teeth. More substantial points will result in important savings in sharpening costs.

Saw rim stability may be achieved at speeds in excess of 20,000 f.p.m., without the use of "tension" under favorable conditions. Saw blade thickness may be reduced at no sacrifice in production rate through the use of higher speed.

While saw arbor speed of 3600 r.p.m. is satisfactory for many conventional operations, many cutting problems will become far less complex when *all* machine builders recognize that saw tooth speed and feed rate control are fundamental factors having a very definite influence as to quality of work as well as saw life.

In considering the circular saw, perhaps a dramatization will furnish a crystal clear picture of its operation.

Suppose you had an automobile that really would run at a sustained speed of 150 miles per hour. Suppose you are now traveling down the highway at 150 miles per hour—13,200 feet per minute. Now keep your eyes sharply focused. Do you see that dark object coming at us? It is a kiln dried hard maple board. It is traveling toward us, end-wise, at 180 feet per minute. Now imagine the impact as the board strikes the automobile. You have looked at the same thing that a tooth on a circular saw has to meet about 3,600 times a minute. In addition, the tooth on the saw must take a bite out of the board. A 14-in. diameter saw on any straight line rip saw travels at 13,200 rim feet per minute. Under load it will be a little less than that. If you had to take 3,600 "bites" a minute and do all this "biting" while you were traveling 150 miles an hour, you not only would need carbide teeth, but you would need a body of fantastic stamina to hold your teeth and maintain them in accurate "biting" position. (It has to be a glue joint, you know—not a tooth mark can show.)

Every production and saw engineer realizes the imperative need for complete, precise and accurate information concerning the material to be cut and the machines to be used. The saw arbor speed and the maximum and minimum diameter blade that can be used indicate the maximum and minimum saw rim travel that is available in feet per minute. The kind and size of material to be cut has an important relationship to the design of the tooth and the number of teeth that should be used. The kind and rate of feed in combination with the above factors determines the chip-loading of the tooth. Assuming good machine condition and proper alignment of the component parts, it is not difficult to determine in advance the measure of efficiency that will prevail.

A well designed and tensioned circular rip saw has satisfactory support for the peripheral cutting action, since the stress resulting there from is parallel to the plane of the blade, but the saw has practically no support sideways at the rim in the axial plane. Failure has been the result of every attempt to transfer substantial percentages of the cutting action to the sides of the teeth. It has invariably led to vibration and rougher cutting. In addition, any pronounced side cutting action is prone to set up excessive rim stresses and complications that preclude its usage. Deprived of the use of a definite side cutting or planing action necessary to secure an absolutely smooth planed edge on the ripped board, a great amount of research work has been done to secure precision running of the saw blade in an effort to produce consistently good glue joints.

Consider the work stresses to which the saw tooth is subjected at the in-

(Continued on page 40)

Men and Machines make

Permawood
HARDWOOD PLYWOOD

While Darlington Veneer Co.'s plant is highly mechanized, we still depend upon the judgement of interested supervisors and the skill of loyal workers to make the fine product we offer you as PERMAWOOD Hardwood Plywood.

One of Darlington's cutting rooms, where freshly cut veneer is carefully sorted and clipped to panel size.

We make PERMAWOOD panels in standard sizes, in all veneer construction from 3/20" to 1-1/16" thick, and in lumber core construction in 3/4" and 13/16" thickness. Widths manufactured are from 30" to 48"; and lengths from 36" to 96".

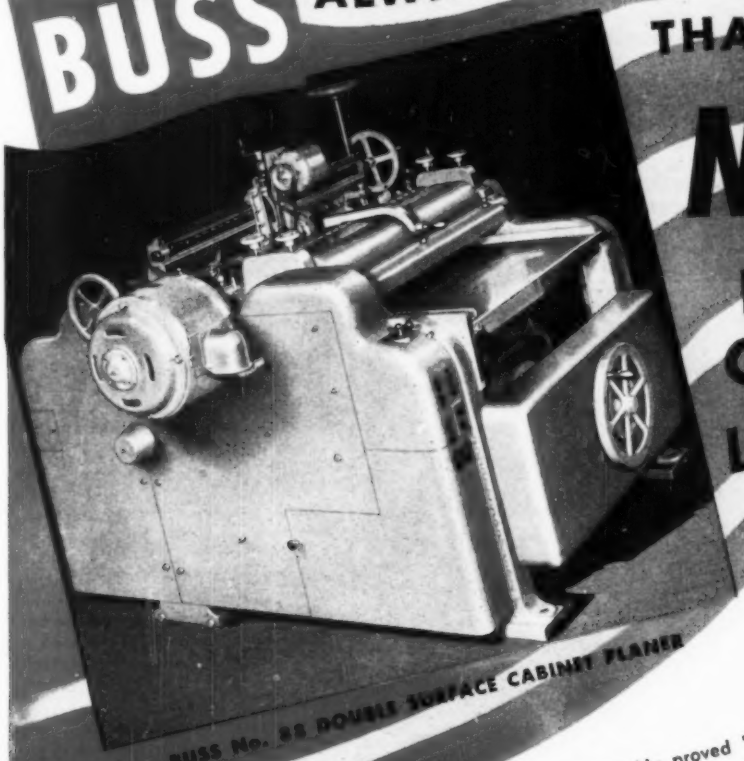
Write for latest stock lists and prices.

DARLINGTON VENEER CO., INC.

Established and in continuous operation since 1918

Darlington, South Carolina

BUSS ALWAYS LEADS IN FEATURES THAT COUNT!



BUSS No. 88 DOUBLE SURFACE CABINET PLANER

NOW IT'S ONE-SHOT LUBRICATION

The time-tested, thoroughly proved "BIJUR" lubrication system is now available on all BUSS planers. Thus by simply activating one little lever, thorough lubrication of all gears, feed rolls and other moving parts requiring frequent lubrication is positively assured. It saves time. It avoids damage that might arise from missed lubrication at vital points. It assures smoother performance and longer machine life. This is just one of many highly desirable features found only in BUSS planers — the product of planing specialists, exclusively. Write for the complete facts and we believe you will agree that BUSS planers offer you the most your money will buy in productivity, quality of finished planing and years of trouble-free service.

There is a BUSS cabinet surfacer to exactly meet your requirements (small, medium or large; single or double surface). Write for bulletins. We will be glad to aid you in your selection.

PLANER HINTS:

STOCK STICKS, OR HESITATES?

Lower rolls may be set too low. BUSS exclusive control makes it easy to achieve perfect adjustments quickly. Write for copy.

BUSS
SINCE 1862
MACHINE WORKS

PLANER SPECIALISTS EXCLUSIVELY

244 EIGHTH ST.,
HOLLAND, MICHIGAN

PRECISION BUSS PLANERS

(Continued from page 38)

stant of impact. A rip saw will cut a kerf of about 5/32 inch. One hundred eighty feet per minute feed will reduce 2½ sq. ft. of wood to shavings in one minute. If the board is ¾ thick, 324 cubic inches of wood are reduced to shavings per minute. If the saw has 24 teeth, then at 3600 r.p.m.—86,400 teeth would pass through the cut in one minute. Therefore, the 2½ sq. ft. of wood would comprise 86,400 chips. One hundred and eighty feet per minute feed means that three feet pass the saw in one second. One thousand four hundred forty teeth pass through the cut in one second. Hence, each tooth must cut a chip 1/40th or .025-in. thick. The board is traveling a little over 1-in. to 1-2/3 revolutions of the saw.

Thus it can be realized how quickly the saw plate can be overloaded. If a thicker board is run without reducing the feed rate, the gullets will be jammed full of chips, the stress on the saw rim will be so great that it will begin to vibrate and bending and buckling will occur. This increases heat and causes blue spots to appear on the sides of the saw. The heat generated destroys the tension and the saw is no longer able to support the rim in running truth. The saw may crack from this heat and expansion, although expansion slots in the rim have been provided.

The continued operation of a dull saw has the same effect as overloading. Excessive rim stress is produced by forcing dull teeth to do the job. Vibration and weaving will occur; the friction produces heat, and heat destroys the tension.

After mounting a saw on its arbor, take hold of the rim and push it sideways, see how little support it has in the axial plane, then mentally visualize the condition that prevails when the teeth are working under load at 150 miles per hour. Thus one can visualize what is happening on the "business edge" of a circular saw. Consider the saw speed, saw blade specifications and kind of material and its thickness in determining maximum feed.

With the introduction of carbide tipped saws, the factor of perfect tension has increased in importance. Variable loading of the saw, running the saw when dull, warped lumber, wobble in the back flange on the saw arbor, misalignment of feed mechanism, lumber that was not planed on one side, and many other obstacles constantly complicate saw operation results.

A definite conclusion has been reached. If a circular saw was to produce a planed smooth edge on a ripped board, it would have to have a side cutting, planing function in addition to the peripheral or bulk cutting action.

It was decided to try small planer teeth set in the sides of the saw, using only a few of them in relation to the number of peripheral cutting teeth to reduce rim stress to a minimum. They were ground so that the chip loading on the planer teeth would be restricted to a "cigarette paper" thin chip. This further limited the possible rim stresses. Then, by having these planer knife edges exactly opposite one another and tilting them backward at a negative rake angle, vibration might be obviated in the rim of the saw and the problem of lack of axial support be solved. This idea was developed and tested.

The edges of ripped boards were absolutely smooth. The negative angle, chip load controlled, side cutting and knife-like teeth, actually steadied the rim of the saw in the cut. This type tooth also resulted in an extremely quiet running saw.

To be continued

WHAT *Casie* CAN'T DO, *Resie* CAN!

Here's something important for a glue buyer to remember—

(1) that if there wasn't a pound of urea to be had tomorrow—NATIONAL CASEIN would be able to supply your glue needs.

(2) that if casein disappeared suddenly from the market, NCC would be able to supply you with a resin formula.

No National Casein customer is dependent upon one type of adhesive—nor are NCC's field representatives limited to a single glue type or formula to meet your adhesive requirements.

"Casie" and "Resie" will tell you that if one of them can't do your glue job, the other can.

Try us. Your inquiry incurs no obligation.

National Casein

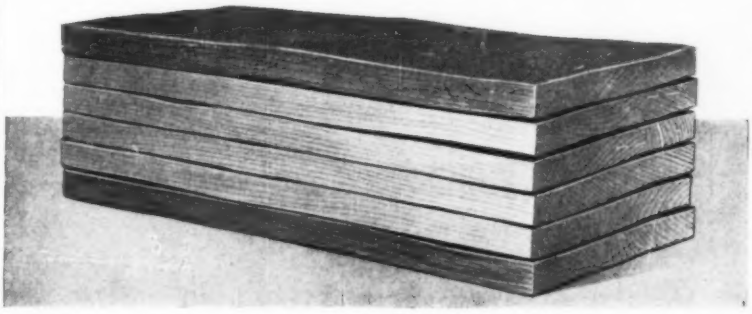
No Glue Problem—Casein or Resin—is too Little, too Big, or too Tough!

605-19 West 80th Street, Chicago 20, Illinois • Broad & Fulton Sts., Riverton, N. J.

Only the

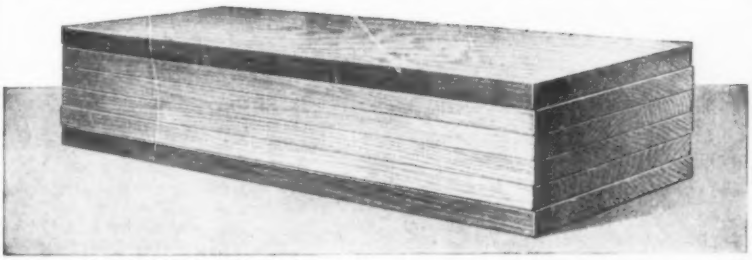
Oliver Straitoplane

Can Do THIS *in One Operation . . .*



BEFORE

Here is raw, rough stock, fresh from the tempering rooms and the saws. It varies in thickness, and is kinked, warped, twisted. No amount of planing will straighten it. Tables and cases made from this unfaced stock will set on three legs instead of four. There's one simple, inexpensive way to correct this.

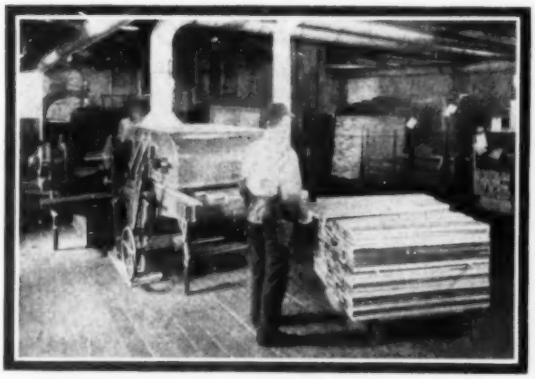


AFTER

The raw stock shown above is fed through the Straitoplane at the rate of 60 feet or more a minute. It comes out of the machine perfectly flat, level and true. Moreover, in the same rapid operation the stock is dressed both sides—finished or rough—to accurate thickness. All subsequent cuts, based on these parallel, true surfaces, can be assembled rapidly.

The "Straitoplane" is the most efficient machine for taking warp and twist out of boards, panels and cores. It planes both sides to dimension in one operation.

Write for Bulletin No. 170 containing complete information about the Straitoplane.



"Oliver" Straitoplane at Widdicomb Furniture Company, installed in May, 1924, and still going strong.

Oliver Machinery Co. Grand Rapids 2, Mich.

you GO with OHIO GREEN

OK THIN PLANER KNIVES, are heat treated for absolute uniformity, both in hardness and temper. Made of special steel.

OK No. 4 — special type, high speed steel for wood-working. Easily withstands heat of fast heavy speeds on rough, knotty sandy lumber. Retains keen edge for long runs — gives perfect finishes.

OK No. 6 — made of specially developed chrome steel to anwer specifications of mills working in soft and green wood.

OHIO KNIFE Co.
CINCINNATI 23, OHIO
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF KNIVES

When to Replace Equipment

Replacing equipment is more than just amortizing the unit off the books. There are 30 signposts which indicate when equipment replacement should be seriously considered. With the present problems facing the industry, careful equipment analysis is necessary.

by E. W. FAIR

Determining when equipment shall be replaced is never an easy matter to decide even in normal times. Whether machines are replaced according to a definite program or only when some problem in connection with their utility to the plant arises, it is necessary to develop some plan of investigation to handle the problem.

Such plans generally include a check list of points on which to evaluate the present and proposed replacement machines from the standpoint of technical suitability and cost-saving features and their value in securing greater production at less cost in the plant.

In all such check lists there are points to investigate and check closely.

One must first concern himself with an investigation as to the technical operating characteristics and limitations of the existing equipment units, and second, with a survey to see what substitute equipment can be installed and what manufacturing advantages such installation will give to the plant.

The technical advantages obtainable from the newest developments in equipment must be weighed heavily in considering any replacement of older units, for nearly all such improvements offer lower production costs as well as lower operating and maintenance costs in their use. These factors must also be given careful consideration in making the decision. Generally, machine replacements are necessary:

WHEN present equipment shows immediate signs of wearing out and therefore efficiency drops and maintenance costs rise.

WHEN any machine has become obsolete and cannot do its job in maintaining efficient work so that one's plant may compete with others in the industry.

WHEN it has become thoroughly obsolete because of limited range or size of work as compared with more modern machinery.

WHEN it falls so far behind in speed of operation that production costs are ahead of competitive operations.

WHEN accuracy of work the machine may be doing becomes less dependable and rejections from its production begin occuring.

WHEN new designs and new developments have provided stronger and more rigid machines with lower costs of operation.

WHEN the rate of output of the unit continues to drop and holds up the production efficiency of others in the plant.

WHEN the installation of other units in the plant have stepped up production beyond the ability of this one particular unit to hold its own.

WHEN newer developments in machinery have combined the operations of this machine and others in the plant.

WHEN it lacks fine controls, special attachments and safety features of a newer designed machine of the same class.

WHEN it can be replaced with a new machine that will not only do the job the older machine is doing but additional work as well.

WHEN a new machine recently developed can replace hand operations connected with the use of the present machine.

WHEN a new machine can increase the ease of set-up of work to be handled to such an extent that production cost cuts in so doing are well worth while.

WHEN greater convenience and safety or operation can be obtained through the use of a newer type machine or a larger model.

WHEN the cost of keeping the unit under consideration in operating order has become too high in keeping with the general maintenance costs upon which plant operating schedules are based.

WHEN the cost of changing or remodeling it will not be too great for the results that can be obtained by this change.

WHEN spoilage can be reduced sufficiently in order to justify the added costs.

WHEN greater output or faster speed of operation can be secured in order to lower production costs for today's competitive market.

WHEN labor cost can be reduced by substitution of less skilled operators on the new machine than the highly skilled operator required on the old.

WHEN the maintenance cost of the new machine will be under that of the present piece of equipment.

WHEN it will be the means of inspiring better and more efficient work from the men and women who use and operate the machine.

WHEN the cost of operation of the new unit is well under the cost of operation of the present old or obsolete unit from a power standpoint.

WHEN the purchase of new equipment can be made without placing too great a load upon the current and immediate future financial condition of the company.

WHEN money has been set aside for depreciation and is available to make this replacement.

WHEN the money invested in the new piece of equipment will obviously earn more than it could if invested in securities on the current market.

WHEN freight costs and costs of installation of the new equipment will obviously earn more than it could if invested in securities on the current market.

WHEN freight costs and costs of installation of the new equipment, when added to its basic cost are not too costly at the present time or have a good chance of being less in the immediate future.

WHEN the salvage value of the old unit is still high enough to make the replacement cost less than a lowered salvage value within the immediate future would bring about.

WHEN more efficient and less costly lubrication can be obtained on the new machine than the one now being used.

WHEN a new design of a smaller or more compact nature will permit less floor-space to be used than with the old machine and where that floor space can be put to good advantage.

Foreign Woods . . .

by GEORGE LAMB

Black Ironwood—
Krugiodendron ferreum
Rhamnaceae (Buckthorn)

While the woods of the Buckthorn family are of little commercial importance, they do exhibit a wide range in structure, appearance and properties. A West African genus, it has wood as light and as easy to work as Spanish cedar. On the other extreme BLACK IRONWOOD probably is the hardest and heaviest wood in the world.

BLACK IRONWOOD grows from southern Florida through the West Indies and in southern Mexico and northern British Honduras. It is a small tree ranging in height from 30 to 50 feet and from 15 to 20 inches in diameter.

The sapwood is yellowish and sharply demarcated from the heartwood. The heartwood is orange to dark brown. It usually is streaked and has a waxy appearance. It is exceedingly dense and strong with a fine and uniform texture. The grain usually is straight, difficult to work, takes a high polish and is very resistant to decay. Sp. gr. 1.34 to 1.42. Lignum vitae, one of the best known heavy woods, ranges in Sp. gr. from 1.17 to 1.32.

Other woods called IRONWOOD:

Over fifty different woods in many parts of the world are called IRONWOOD or some particular IRONWOOD, principally with source or color prefixes. In the United States alone there are at least 10 genera that have species that are called IRONWOOD. The best known is Ostrya, which is also known as Hop hornbeam.

BANUYO—*Wallaceodendron celebicum*
Leguminosae (Pea) Family

Wallaceodendron is a genus with but a single species and is found only in the Celebes and in the Phillippines where it occurs in the Babuyan Islands, but mostly on Luzon. It has a short trunk 30 to 40 feet long with a maximum diameter of 5 to 6 feet.

The sapwood is relatively thin, light colored and quite distinct from the light golden brown to yellowish brown heartwood. The grain is irregular, often curly or wavy. The texture is moderately fine and glossy. It is comparatively hard and heavy, Sp. gr. 0.69 when air dry.

The wood seasons well, except the curly boards which must be handled carefully. It works very easily and takes a high finish. It is considered very durable when used for interior purposes.

BANUYO is used in the Philippines for high-grade interior woodwork, cabinetmaking and for carvings. Figured logs produce excellent face veneers.

Other names:
BALAYONG, NIPOT-NIPOT and 20 other local names

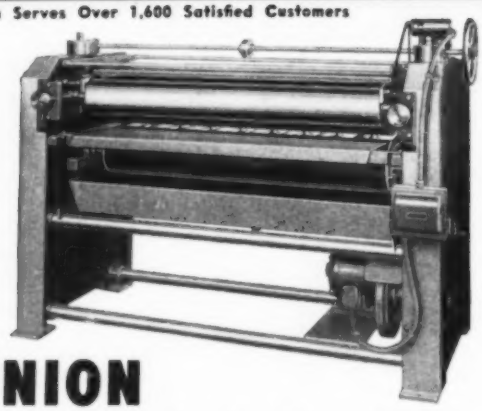
Other woods called BANUYO:
Phoebe sp. (KABURO)—Philippines.

CAMPHOR, EAST AFRICAN—
Ocotea usambarensis
Lauraceae (Laurel) Family

EAST AFRICAN CAMPHOR is found is Kenya where it is the largest tree growing in the colony. Information is not available as to its occurrence elsewhere in East Africa. It reaches a height of 120 feet and a

a UNION machine . . .
TO MEET ANY WOOD GLUING NEED

Union Serves Over 1,600 Satisfied Customers



UNION
Automatic Roller Coater

Unexcelled for accurate, economical operation in spreading all types of coatings.

Standard models take sheet widths from 12" to 108"; thickness variance from 0" to 4". Available with hollow rolls to permit circulation of cold water through them. Prolongs pot life of resinous adhesives. A temperature reduction of 15° will double your pot life.

NOTE: Any Union spreader may be equipped with rubber-covered doctor roll, if desired, at no additional cost.

Union makes equipment for every standard production job in wood gluing. Designs and makes machines for special applications, including machines for electronic gluing.

Write for data on the complete Union line. Name of agent in your territory sent on request.

•

Write for your free copy, "The How's and Why's of Wood Gluing," by Thomas D. Perry.

UNION TOOL CORP.
312 East Market Street
Warsaw, Indiana, U.S.A.

USERS SAY UNION CUTS COSTS — SPEEDS PRODUCTION

maximum diameter of 10 feet. Trees 5 to 6 feet in diameter are common.

The wood is a light yellowish brown when first cut, darkening to a deep brown on exposure. It closely resembles African walnut (Lovoa) in grain and texture and has a distinct scent of camphor. The grain varies from straight to interlocking and wavy. It works well with tools. It drys without undue difficulty and possesses reasonable stability. It is of medium strength and weight. Sp. gr. 0.51.

EAST AFRICAN CAMPHOR is used locally for furniture and panelling and has distinct possibilities both as lumber and veneer in the export trade if supply and transportation are not limiting factors.

EAST AFRICAN CAMPHORWOOD is not to be confused with true camphorwood (Cinnamomum camphora) or Borneo camphorwood (Dryobananops sp.).

Native name:
MUZAITI

SUPA—*Sindora supa*
Leguminosae (Pea) Family

SUPA is by far the most important species of the two species that grow in the Philippine Islands. It is found principally in Luzon and Mindora. It is a tall straight tree with a diameter up to five or six feet with a clear cylindric length of 30 to 40 feet.

The sapwood is light, sometimes pinkish and distinctly separated from the heartwood, which is yellowish red when fresh turning to chestnut brown or russet with age. The grain is interlocking so quartered surfaces show a stripe figure. The texture is comparatively fine and very glossy. The wood is rather hard and heavy. Sp. gr. 0.83 when air dry. This is about the same as padouk or rosewood.

SUPA seasons slowly but with little degrading. It is rather difficult to work but takes a high finish. It is in demand in the Philippines as a cabinet wood and is one of the most beautiful woods that grow in the Philippine Islands. It is rather surprising that there appears to be no record of its importation into the United States in commercial quantities.

Other names:
BALOYONG, TAPULAO, BALAO, PAINA, PARINA, MANAPO

Other woods called SUPA:
None.

SEPETIR—*Sindora sp.*
Leguminosae (Pea) Family

This family contains over 430 genera and more than 7,000 species distributed over the whole earth and the family is rich in tropical trees. There are six species of Sindora to be found in the Malayan Peninsula and two species in the Philippines. The name SAPETIR is applied to the Malayan species.

SEPETIR varies according to species. It is a medium to large scattered tree and would be difficult to extract from the forest unless other commercial species could be logged at the same time. This usually is the case.

The sapwood is light gray-brown, sometimes with a pink tinge. The heartwood varies from dark brown to light brown or golden brown. It also contains dark areas that show up on longitudinal surfaces as dark or black streaks. These may be narrow and inconspicuous but at times produce a very ornamental figure.

The grain is straight or only shallowly interlocked and the texture is moderately fine and even. This wood is usually remarkably free from defects. SEPETIR seasons well and when properly seasoned is very stable.

SEPETIR is variable in weight but the average for air-dry material is approximately 0.60 sp. gr. Locally SEPETIR is considered a very good cabinet wood and figured logs should find a ready market for veneers.

Other names:
None recorded

INCREASE PRODUCTION as much as 100%

Lift Installed at	Production Increase
Double Surfacers	40% to 75%
Rip Saws	30% to 60%
Cut-Off Saws	20% to 50%
Matchers and Edgers	20% to 40%
Stacking Kiln Trucks	50% to 100%
Box Car Loading Dock	25% to 50%

INSTALL LEITELT LUMBER LIFTS

A glance at the above figures, FURNISHED BY USERS, proves how Leitelt Lumber Lifts increase production.

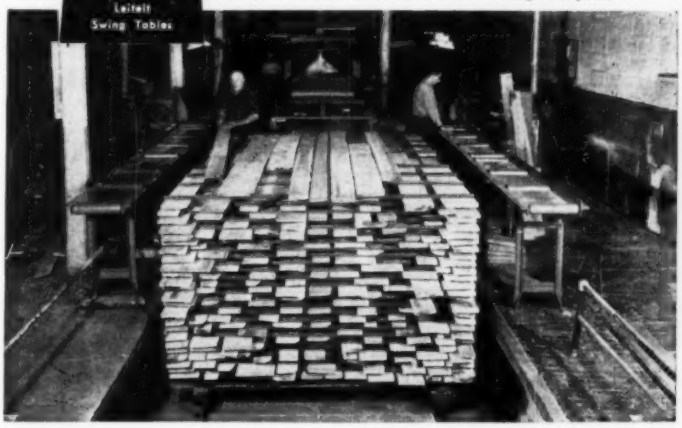
You can get these profitable increases in production and save the labor costs of one or two men with a Leitelt Lumber Lift in your plant or yard. Leitelt Lumber Lifts are built in a full range of capacities for handling loads from three to thirty tons easily and safely.

Let Leitelt engineers solve your production problems. Write Today.

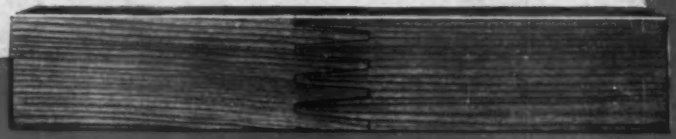
Also Manufacturers of Power Transfer Cars, Car Pullers, Power Driven Turntables, Subcars and Leitelt Swing Tables

LEITELT IRON WORKS
"Pioneer Builders of Lumber Lift Equipment"
335 Mill St., Grand Rapids 2, Michigan

A typical modern installation showing a Leitelt Lumber Lift feeding two cut-off saws. This is how one of the largest table manufacturing plants in the country has increased their production at the vital point where material starts to flow through the plant.



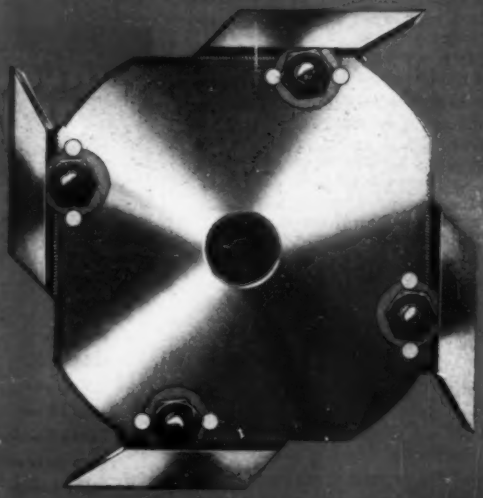
Yates-American
FINGER-JOINT HEAD



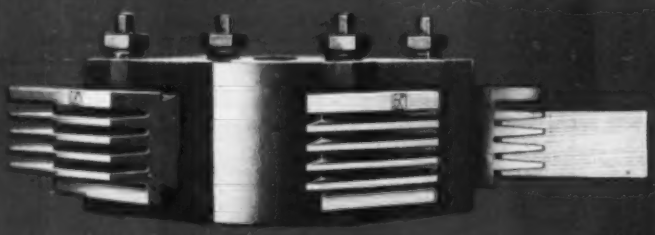
Successful

. . . conservation of valuable, high-grade stock accomplished by end gluing (finger jointing). Growing consumer acceptance supports the findings of research laboratory tests — that finger jointing CAN be a highly successful method of conserving stock — need NOT detract from the appearance or strength of the finished product.

No special, single-purpose cutterhead is required. The Yates-American method provides for strong finger jointing with a multi-purpose cutterhead. For complete information on successful finger jointing write to Yates-American



THE FINGER-JOINT HEAD



Illustrated above is the "200 Series", patented Cutterhead, equipped with four Finger Joint bits for a 9" cutting circle—used on double end tenoners.

MATCHERS
BAND RESAWS
SANDERS
SURFACERS
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FOREST PRODUCTS RESEARCH SOCIETY

F.P.R.S. Monthly Bulletin

Research • Development • Production • Utilization • Distribution

by FRANK J. ROVSEK, Executive Secretary, P. O. BOX 2010, UNIV. STA., MADISON 5, WISC., DECEMBER, 1951

It's A Buyers', not Sellers' Market, Says N.P.A.'s Holman

Opening Northeast Section Meet Before 200

ROCKWELL CAGE indoor athletic arena of the Massachusttes Institute of Technology, was a much converted place as FPRS leaders officially opened the program. L. to R. —Frank Parrish, Heywood-Wakefield, General Program Chairman; Fred Dickinson, Northeast Section Chairman; Al Dietz, M. I. T., co-chairman with Harold Sheppard on Local Arrangements; and Jim Tynan, A. G. Spalding Co., Moderator for the opening Session. For more photos see three pages later.

If You Seek to Do Business With U. S. Sell It Just As You Would Any Private Concern, says Harold E. Holman, Before 200 FPRS Meeting Attendance

BOSTON, NOV. 2—Talking before the Fall Meeting of the Northeast Section at Rockwell Cage, Massachusetts Institute of Technology, H. E. Holman, Asst. Director of the Lumber and Wood Products Div., National Production Authority, outlined the procedures recommended in "Obtaining Contracts or Sub- Contracts from Government Procurement Offices."

HAROLD HOLMAN, N.P.A.

There appears to be a prevalent feeling that all that is necessary to obtain contracts is to notify the local procurement office that one has open capacity, said Holman. This is not true, "It is a buyers' market, not a sellers' market." The seller should recognize that the Chief of procurement in either a Washington or local office is a buyer, the same as in private industry, except that in many instances he is charged with buying on a larger scale. "He buys on the basis of quality, price, and service . . . and it is the responsibility of industry to convince him that it can meet all

(Continued on page 48)

New Developments in Core and Panel Manufacture Discussed at Carolinas Meet

CLEMSON, S. C., Oct. 26—One hundred members and guests of the new Carolinas-Chesapeake (formerly Virginia-Carolinas) section met at the Clemson House in this mountain retreat to discuss improved methods of core and panel manufacture, from lumber handling through distribution.

New Officers Elected

During the business meeting new officers for 1951-52 were elected: Chairman, Monie S. Hudson, Taylor-Colquitt Co.; Vice-Chairman, R. E. Palmer, Henry Plywood Corp.; Sec-Treas., E. S. Harrar, Duke University; Trustees, S. A. White, White Furniture Co.; W. L. Irwin, Poinsett Lumber; H. B. McKean, Timber Engineering Co.

How Poinsett Lumber Does It

"Modern Methods of Handling Lumber" at the Pickens Works was discussed by W. L. Irwin. He described and showed a film of the entire sequence. The advantages were summed up as: savings in handling help; stacking done under buildings—no weather problem; neat, uniform yard; permanent lumber foundations; air circulation of the best; little maintenance. Disadvantages include: high initial investment; stacking unit and yard arrangement are a high production unit, requiring ample lumber or other work to be available.

(Continued on page 48)

New Officers Elected at Inland Empire Section Meeting, Sandpoint, I.

SANDPOINT Ida.—New officers elected to guide the Inland Empire Section during 1951-52 include: Chairman, L. V. Brown, Northwest Timber Co., Spokane; Vice Chairman, Howard R. Dix, Anaconda Copper Mining Co., Bonner, Mont.; Sec-Treas., John W. Titcomb, Potlatch Forests, Inc., Lewiston, Idaho; Trustees, A. D. Decker, Valentine Clark Corp., Newport, Wash., and Clarence O. Graue, Potlatch Forests Inc., Coeur d'Alene, Idaho.

Papers at the second annual conference of the Section included: "Uses and Manufacture of Wood Flour" by Robert E. Jones; "More Complete Utilization of Wood Wastes" by Roy Hoffman; "Valuation of Ponderosa Pine Stumpage by Use of Three Grades", by I. V. Anderson; and "Drying Wood by Chemical Vapor," by D. L. Haynes.

As Inland Empire Met at Sandpoint, Idaho

PRESENTING PAPERS, L. to R.—Robert E. Jones, Pres. Lumber-By-Products Co., Spokane; D. L. Haynes, Pack River Lumber; Ray Hoffman, Potlatch Forests; and I. V. Anderson, Chief Utilization Div., U.S.F.S., Missoula, Mont.

OUTGOING OFFICERS T. C. Spaulding, Chairman; Don Walters, Sec. Treas. meet with newly elected Chairman, Larry Brown.

FPRS MEMBERS and guests inspect plant of the Pack River Co. at Sandpoint, I.

CAROLINAS-CHESAPEAKE

(Continued from page 47)

The proper production of kiln-dried Hardwood Dimension, resulting in complete satisfaction to the customer and a fair return to the producer is a science, according to Ferd Haas, the M. B. Farrin Lumber Co., who proceeded to show the attendees how it was done.

John Reno, Pacific Lumber Co., reported on performance records of redwood as a core stock.

Lumber Core Gluing

R. F. Wilder, the Mengel Co., analysed the three methods in current use for manufacture of lumber cores—carrier clamps; hot press and RF gluing. Regardless of method used, here are some "musts." 1) Stack must be relatively flat; 2) edges square and straight; 3) mating surfaces smooth; 4) moisture content between 6 and 10%; 5) sufficient down pressure to flatten out individual boards; 6) adequate edge pressure, usually 200 psi to force adjacent edges into intimate contact; 7) proper selection of adhesive; 8) glue spread not only correct amount but uniform; 9) sufficient curing time while joint is still under pressure; 10) After removal of pressure, a further curing period should be allowed.

To the question, "What is new in panel gluing?" John W. Maxwell, the Borden Co., answers, "To mention a few factors, we have new glues, new procedures of handling glue, new means of educating personnel and new practices in conducting research. These have lead us toward complete modernization of equipment, new arrangements for factory layout of equipment with conveyors and other time-saving devices."

Armin Elmendorf's paper, "Methods of Testing Adhesion to Wood" was read by Jim Bethel. It reviewed current methods for testing the bond in laminated wood and plywood, including their limitations.

C. W. Dietterich and J. L. Butler, described a program in "Quality Control in Gluing on an Industry Wide Basis." Its objectives have been to establish a plywood testing laboratory (Southern Plywood Manufacturers Assoc.), establish an inspection service; and establish a grade-trade marking program.

NORTHEAST MEETING

(Continued from page 47)

three, including a time schedule for delivery."

Speaking on "Research Projects of interest to management," A. G. H. Dietz, professor of Building Engineering and Construction, M. I. T., outlined the principal types of facilities available to industry, and those projects best suited for university research.

Research Development

Dispelling a common misconception that the forest products industries have been totally lacking in true technical advances, Armin Elmendorf, president of the research firm of the same name, outlined fifteen major technological developments that have resulted from research since World War I. In every instance, the following products were unknown prior to that time—today are in universal use. They are: Insulation board; hardboard; wood fiber insulating blankets; wood fiber insulating fills; weatherproof adhesives; fire-resistant fiber boards; wood defibration; flexible wood flooring; flexible wood wall covering; hot gluing with cold plates; stressed skin construction; metal-clad plywood; compounding lumber, bark utilization; and sawdust and shaving utilization.

Integration

W. Arnold Hosmer, Harvard Graduate School of Business stressed, "Integration of Pulpwood and Lumber Operations in Hardwood." "Both products occur in the same stands, use the same roads and even exist in the same log. The profitability of both of lumber and plywood firms can be increased by the joint use of both products and can likewise be made to facilitate sustained yield on our forest lands," said Hosmer.

Cut-to Length Stock

"Kiln drying green cut to length stock direct from the bolting saw" was discussed by Record Pullen of the Moosehead Mfg. Co. He said, "More and more factories are feeling the need of better utilization of the lumber which they have on hand. We who live in a timber area realize that quality and quantity are fast disappearing from our forest. The policy of the Moosehead Co. is to get the greatest possible recovery from log run bolter sawing. Our experience has shown that a sufficient volume of the log can be utilized into furniture to make the operation feasible."

FPRS Forum

The FORUM is intended to ... for open discussion by all F.P.R.S. members, bringing practical answers to specific problems. Questions or contributions should be direct to the Executive Secretary, c/o Wood/Wood Products.

The Problem: How can black walnut gunstock blanks be kiln dried without honeycombing?

The Answer:
by JOHN M. McMILLEN, Technologist
U. S. Forest Products Laboratory
Madison, Wisconsin

There are two keys to the prevention of honeycombing in gunstock blanks: (1) good end coating; and, (2) temperature control. Most honeycombing in walnut gunstock blanks starts as end checking. The end checks penetrate into the blanks and open up into honeycomb checks when kiln temperatures are raised too rapidly.

End Coating

A hot-dip, pitch-asphalt end coating developed by the Forest Products Laboratory and widely used by the gunstock industry will prevent end checks. The composition of this end coating, by weight, is:

60 parts of 213 degree F. coal-tar pitch
25 parts of 155 degree F. coal-tar pitch
15 parts of 210-220 degree F. asphalt

This coating can be applied by dipping, but the use of a roller device described in the U. S. Forest Products Laboratory Report No. R1435 is preferable. Plain asphalt of the 210-220 degree F. type also has been used successfully by some plants. The higher melting pitches used alone are too brittle. They chip during rough handling and leave some ends poorly protected. Lower melting pitches run off in the kiln.

Kiln Temperatures

Kiln operators who have had little or no experience with gunstocks or who do not have definite knowledge that their kilns maintain uniform temperatures throughout, with no "hot spots", should not exceed the dry-bulb temperature given in Table 1.

This is schedule T3-D4, from U. S. Forest Products Laboratory Report No. D1791, "Schedules for the Kiln Drying of Wood." By using this schedule, an operator can be reasonably sure that the dry-bulb temperature will not be excessive before the cores of the blanks are dried below the danger point of honeycombing. This schedule, when used in a modern kiln with forced-air circulation at 200 to 300 feet per minute, should dry black walnut gunstock blanks, 2½ inches thick, in approximately 65 days.

Table 1.—*Beginners' schedule for walnut gunstocks*

Moisture Content		Temperature		Relative Humidity
From	To	Dry-bulb	Wet-bulb	
%	%	°F.	°F.	%
Initial	50	110	103	78
50	40	110	100	70
40	35	110	95	57
35	30	110	85	36
30	25	120	80	17
25	20	130	80	10
20	15	140	90	14
15	7	160	110	21
Equalize		160	131	44
Condition		160	150	77
36 to 48 hours				

Kiln Check-up

Since excessive kiln temperatures may be disastrous, a kiln check-up should be made before each charge of gunstock blanks is dried. Fans, coils, traps, automatic coil and spray valves, and hand shut-off valves should be examined. Booster coils between the loads in multiple-track kilns should be shut off when drying gunstocks, unless it has been found by temperature checks that they do not produce excessive temperatures. The recorder-controller should be calibrated so that the temperatures set and recorded are the same as the actual temperatures at the instrument bulbs in the kiln. During a test run on some non-critical material before attempting to dry gunstocks, entering air temperatures should be observed in different parts of the kiln to see how close they are to the actual temperature at the instrument bulbs. When considerable differences are found, measures should be taken to correct the faulty conditions and eliminate the differences, if possible. If the differences cannot be eliminated, the dry-bulb temperature should be underset on the instrument enough to compensate for the excessive temperature in the hottest zone. If undersetting of the dry-bulb temperature is necessary, cold zones of the kiln should be watched for formation of mold. If mold occurs, the wet-bulb depression can be increased 1° or 2°, or, if necessary to restore circulation, a brief high-temperature, steam-sterilization treatment can be used. Undersetting of the dry-bulb temperature should be continued with each new temperature step, unless additional temperature checks show this is no longer necessary.

Stacking and Sampling

To insure uniform drying, gunstock blanks should be stacked on stickers, with air movement parallel to the stickers. If it is necessary to place the sticker in another way, at least 1 inch of space should be left between blanks. Where the air circulation is not good, the blanks will dry more slowly and be subject to honeycombing when the temperature is raised on the basis of faster-drying samples.

The drying of gunstock blanks is a precision job. It requires the use of the best kiln-sample procedure. Beginners should use at least 12 samples, representing both the driest and the wettest material in the load. Sample pockets should be not closer than 2 feet from the ends of the loads. Samples should be placed in loads throughout the length of the kiln, making sure that some samples are located in both the hottest and coldest zones. The pockets should be numbered, so that each sample can be returned to its own pocket after weighing. Changes in kiln conditions should be based on the average moisture content of the three wettest samples.

When the moisture content of the three wettest samples is down to 15 percent, sections should be cut from six blanks for intermediate moisture content determination. Moisture content corrections can be applied to all of the other samples. The driest sample should be dried to 6 percent before starting equalization. The wettest sample should be dried to 8 percent before starting conditioning.

Equalization brings the moisture

(Continued on page 50)

As Inland Empire Met ...

Northeast Success Formula: Good Papers, Forums, Exhibits

SURROUNDING MEETING AREA were fifteen table-top and educational exhibits displaying publications of the U.S.F.P.L., instruments, finishes, etc.

FPRS PRESIDENT Roy M. Carter stressed member participation in FPRS.

TOASTMASTER Dean George Garratt of Yale University; James Hamilton.

AS FRIDAY SESSIONS got underway—l. to r., Recorders Earl Stivers and N. Y. State man subbing for Eric Anderson; W. B. Wilkins, Moderator; speaking, Fred Simmons, U.S.F.S.

EDGAR C. HURST, guest speaker at luncheon stressed complete wood utilization.

Gunstock Blanks

(Continued from page 49)

content of individual blanks within a narrow range. This step may not be necessary if the moisture content of the blanks is nearly uniform at the start, and the operating conditions throughout the kiln are uniform. The conditioning treatment relieves case-hardening stresses. It is not necessary to steam the blanks during the drying, and prolonged steaming before the blanks are dry may promote honeycombing.

The final average moisture content, moisture content of the blanks of the shells and cores, and extent of case-hardening relief should be determined by cutting sections from all samples after conditioning is completed.

An accelerated kiln schedule and other detailed suggestions for speeding-up the drying of gunstock blanks are described in U. S. Forest Products Laboratory Report No. R1433. Considerable experience should be attained drying gunstocks, however, before attempting to use this schedule. As an approach to a speed-up, schedule T5-D4 from U. S. Forest Products Laboratory Report No. D1791 is suggested. By following this schedule, drying time should be reduced to approximately 55 days. Use of the fully accelerated schedule should reduce drying time to 45 to 50 days.

If it is necessary to dry gunstock blanks in a natural-circulation kiln or a kiln with very slow air circulation, the wet-bulb depressions can be increased 2° to 4° during the first two steps of the kiln schedule.

If drying lags in any type of kiln and contract requirements necessitate speeding-up drying, such action should consist of lowering the relative humidity a little faster than called for in the T5-D4 schedule. No attempt should be made to gain time by raising temperatures above those shown in Report No. R1433.

Our more than thirty-nine years of service are an assurance to Industrial users of Plywood and lumber products that they are "on the right track" to a dependable source of supply. Yes, if you have a Wood Products problem this should be of real interest to you. It's PAMUDO for Pine and Fir cut-stock; factory grade Pine; Fir Plywood in standard sizes or cut-to-size.

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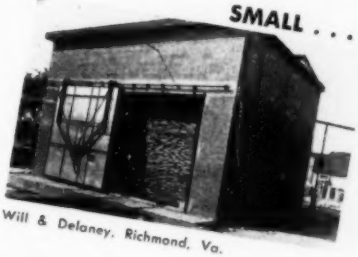
- Kansas City 5, Kansas
- Chicago 38, Illinois
- Baltimore 31, Maryland
- Elizabeth, New Jersey

There's A Moore Cross-Circulation Kiln For Every Drying Need

SMALL . . . .



Will & Delaney, Richmond, Va.

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DRYING UNIT PACKAGES . . . .

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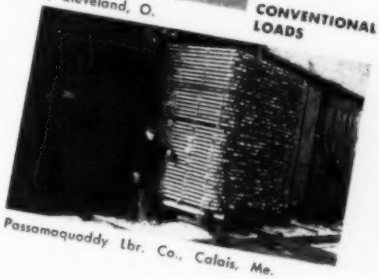
OR CONVENTIONAL LOADS



Passamaquoddy Lbr. Co., Calais, Me.

Get the facts, and you'll get A Moore Cross-Circulation Kiln
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MOORE DRY KILN COMPANY

Oldest and Largest Manufacturers of Dry Kilns and Veneer Dryers

JACKSONVILLE, FLORIDA · BRAMPTON, ONT., CANADA · VANCOUVER, B. C., CANADA · NORTH PORT, MICH.

FREIGHT CAR

(Continued from page 23)

resistance as the trailer is hauled. Smooth side surfaces also mean less power needed to pull the unit.

The natural insulating properties of wood give the trailer its biggest advantage. *Unicel* trailers can be used as reefer trailers and general haul rigs with no loss in cubic load capacity. Many small operators can't run reefer rigs because of the loss of space due to the amount of insulation required. With the new unit, a naturally insulated job, two and ¾-in. of monocoque-girder wall space does the same job as a double insulated conventional carrier.

Designed to haul 40,000 pounds, the unit has been tested carrying up to this capacity—an increase of 4,000 pounds over normal cargoes for trailers of this size. An interesting note in trailer design is the fact that while the unit may be built to carry 40,000 pounds, because of the bulk and cubic arrangement of the cargo, 35,000 pounds is many times considered a full load.

The creation of a plywood trailer having ¼-in. outside skins, ⅜-in. inside, glued to the wood honeycomb sections with phenols and resorcinol adhesives is another wood product stemming from stressed skin construction research, much of which was developed at Madison's Forest Products Laboratory. Factory built houses such as the Harnischfeger units (described in the October 1951 issue of *WOOD combined with WOOD PRODUCTS*), freight cars, house trailers, and now—truck trailers, should give forest products men the idea that they can make wood's marketing horizon unlimited. BUT, it takes a combination of research, production, and marketing know-how to do a job. WOOD can do it better if it is designed to do it better, taking into consideration the limitations as well as the advantages.

Current shortages give wood its second chance in a decade to get back markets it had traditionally, but it can lose these as rapidly as it did in 1946 unless the industry takes a look at the projects such as the *Unicel* trailer and says, "We can do it, too!"

"NOT TOO CLOSE"

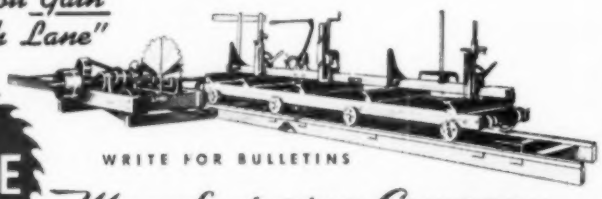
This is one way to beat the rising cost of living but we're afraid our trusting friend will actually lose his head as well.

and did you know . . . .

Speaking of rising costs . . . it's time you put a LANE MILL in action at your logging operations.

The LANE TRACTOR SAW MILL (illustrated) will not only cut costs but will "shave" all-important log conversion time as well. It requires a minimum investment and is truly economical to operate. And remember . . . your sawyers will never "lose their heads" with a LANE MILL to speedily and efficiently back up important sawing decisions.

"You Gain with Lane"



LANE

WRITE FOR BULLETINS

Manufacturing Company

MONTPELIER, VERMONT

WAGE RATES

(Continued from page 31)

of valuable workers.

Too much emphasis cannot be placed upon the application of job classification and rate range.

Offsetting Pre-Freeze Range Boost

WSB has provided a method by which you can figure how much pre-freeze increase must be offset under Regulation 6 when an increase was applied to the minimum or maximum of a rate range or both, but no corresponding general increase was given.

1. Subtract the mid-point of the old rate range from the mid-point of the new rate range for each classification.

2. Multiply that difference by the number of employees in the job classification at the time you increased the minimum and maximum of the rate range.

3. Add up the result you get for each job classification in the unit and divide by the total number of employees in the unit.

The result is the amount of pre-freeze increase which has to be offset.

Other procedures permissable under Regulation 6 include: Distributing Increases in rate ranges. Range Adjustments (No general increases.) Range Adjustments with percentage

(Continued on page 55)

Boring Bill says—
"ROOT G250 IDEAL FOR MISCELLANEOUS BORING"

You will find this machine—Model G-250—the perfect answer to all types of miscellaneous boring and mortising. Ample throat room, adjustable leverage point plus many other features make this machine easy to operate.

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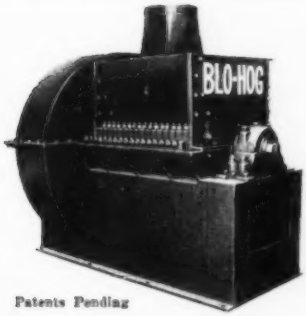

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Eats Up Everything

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Conveyor-fed, no attendant is required to "feed the hog."

Sturdy breaker lugs give absolute protection from major damage caused by tramp steel.

Maintenance costs unbelievably low.

Write for bulletin and details.

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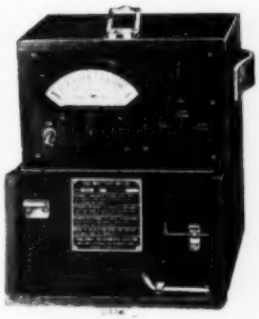
HOW TO MEASURE MOISTURE
MOST ACCURATELY . . . MOST EASILY

For all-purpose duty—
TAG MOISTURONIC METER



No other moisture meter has all the advantages of the Tag Model 8008 Moisturonic—the only moisture meter that measures up to 150% wood moisture. It's dependable, of course—like all Tag and Weston instruments. It's as easy to operate as top-rank engineering intelligence has been able to make it. It weighs only about 10 pounds—has a sturdy, comfortable carrying strap. Fine quality in appearance as well as performance. Both battery and A-C types. Write today for Bulletin TT10 giving full description and technical details.

***For utmost portability—*TAG MIDGET MOISTURE METER**

The Tag Midget is smaller and more accurate than any other portable-type moisture meter—there's longer experience behind it. Weighs less than 4 pounds. Operates on standard dry cell inside. Instantly indicates wood moisture from 7% to 30%. Unequalled for convenience and dependability in "portable" work—use it to check lumber, lath, shingles, plaster walls and ceilings, boards, plywood, beams, and woodwork anywhere. For details, write for Bulletin 1295. B417

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MARCH 19, 1951

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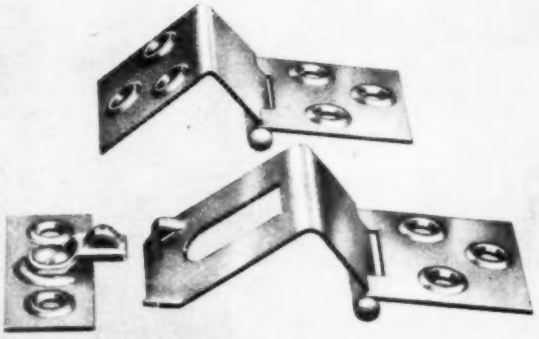

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Faster Pond Bucking *SAVES* Man Hours!

With the new *Wide Kerf Chain* bucking logs to length in the mill pond is a simple, speedy matter. *L-M Pond and Deck Saws* are bucking 40-inch logs to length in less than 60 seconds per cut. Gas or electric power available. Bar length available (in stock) 3 to 10 feet.

IMMEDIATE DELIVERY!

Write us for users' names in your vicinity. Also for complete details about L-M pond and deck saws.

L-M electric driven chain saw bucking logs to length in 15-acre mill pond of Long-Bell Lumber Co., Vaughn, Oregon. L-M unit has 84 inch bar using Atkins chisel bit chain powered by 10 hp. motor. Photo courtesy The Lumberman

Portable electric chain saws previously manufactured by E. C. Atkins & Co. are now manufactured by L-M Equipment Co. . . . giving us a chain saw for all types of cutting.

Pond and Deck Saws • Log Splitters • Chains and Bars for All Chain Saws

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(Continued from page 52)

across the board boost. Range Adjustment with varying increases in job classification.

Everything is pointing to a general scarcity of skilled workers in all industries. With the tightening up of the labor market and the recent increase in Federal Income Taxes, workers will leave their jobs if the wage differential becomes too great between their own industry and wage rates which might be offered in their immediate area.

Management in the Woodworking Industry must frequently review their payroll structure and promptly make the necessary adjustments—and make application for adjustments permissible under the WSB Regulations, and as specifically described under: Inter Plant Inequities; Intra Plant Adjustments; Job Evaluation Plans; New Plant Petitions; New Incentive Plan; and Modification of Piece Work Plan.

Wage Stabilization Board officials already have hinted that they intend to follow a "liberal" policy on pension, health and welfare issues. To date the woodworking industry has not had too much pressure from the labor organizations on these issues, but, must anticipate greater pressure in the near future.

Wood

You believe it?

The first sawmills of record were built in England in the 16th Century, but failed because of the antagonism of hand sawyers.

?

A valuable chemical from California Sugar Pine is used medically for the treatment of vitamin deficiency. Called Cyclose compound, it brings five dollars a pound on the market.

?

More than 18,600 miles of forest windbreaks were planted by hand in midwestern states between 1934 and 1941. At least 90 percent of these, 217 million trees, survived, and now provide shelter, erosion control, shade and useful wood materials for thousands of farmers.

?

The Bible gives the earliest record of wood-cutting tools, mentioning their invention by Tubalcain who lived seven generations after Adam and Eve.

Delaware had the lowest forest fire losses in the nation in 1950—342 acres burned.

?

Wood used in manufactured products take one-third of all lumber and one-half of veneer and plywood total production, according to a survey made of 92,000 plants in 1948.

?

Lumber and building material dealers are the sixth largest retail group in the United States.

?

A typical aggressive lumber dealer will handle about 1,327,000 board feet of lumber in a year.

Minnesota claims to be the first state in the Union to give any consideration to forestry education, based upon a move in 1884 to establish a school of forestry at the University.

PLYWOOD WANTED

Perhaps you are a toy manufacturer or a user of small pieces of plywood. Someone has exactly what you need. A Trading Post ad may help you to reduce your manufacturing costs.

INDUSTRIAL LUMBER USERS

PROFIT 3 WAYS

through North Pacific know-how

If you will give us complete information as to where and how you use lumber, our staff of experienced wood engineers will study and analyze that information and perhaps ask more questions. Then at no cost or obligation to you we will strive to show you how North Pacific can help you save time, money and worries.

You may be able to lower production costs—*and increase profits*—by letting North Pacific furnish lumber fitted to your needs. Waste can be cut to a minimum and the quality of the finished product can often be improved.

For on-the-job consultation and service, one of our factory trained representatives will come direct to your plant.

SEND TODAY complete specifications for all jobs where you use (or plan to use) lumber. Please tell the end uses, too!

SAVE TIME MONEY WORRIES

We can furnish you: Douglas Fir • Hemlock • Spruce Noble Fir • Western Red Cedar • White Fir • Larch Ponderosa Pine • Sugar Pine • Idaho White Pine.

ONLY THE BEST NORTHWEST LUMBER

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VENEER COMPANY

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ROTARY, SLICED AND HALF-ROUND

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Penwood
PLYWOODS
Hardwood Plywoods for Quality Trade

THE ARISTOCRATS IN
BIRCH—MAPLE—RED OAK—WHITE OAK—ASH—BASSWOOD—ELM—WALNUT—MAHOGANY

PLYWOODS

SPLICEDWOOD CORPORATION
MELLEN, WISCONSIN
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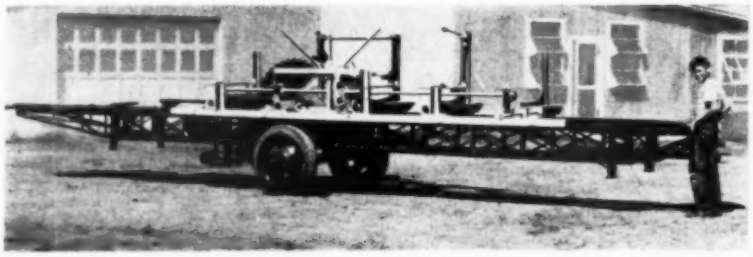
Cut Lumber Costs with Improved Precision Sawmill

Economical cutting of small tracts without log-hauling is now practical.



Manufacture good lumber at substantial savings with the Jackson Lumber Harvester. This new-type mill moves to working location already assembled and is sawing in an hour. Tow it at truck speed. Check these facts:

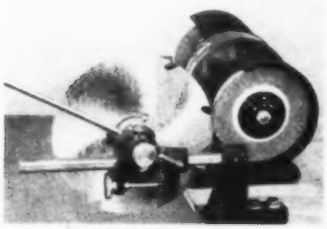
- **Produces quality lumber at 5 man hours per M.**
- **Only one man required (plus off loader and ramp labor).**
- **No millwright required . . . easy to move and set up.**
- **Performance proven by 15 years in the woods.**

Jackson LUMBER HARVESTER
P. O. Box 710-N
Brewton, Alabama

For Literature and names of Jackson owners in your vicinity WRITE OR WIRE TODAY.

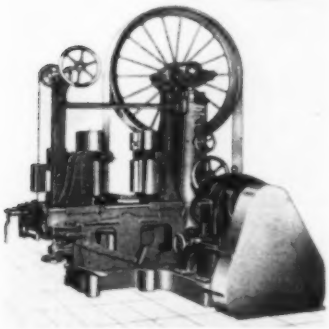
NEW

Products . . . . processes
equipment . . . . methods
materials & developments



New Saw Sharpener

A new type of circular saw blade sharpener designed for the new safety saw blades is announced by PTI Incorporated, Dept. W, 401 Broadway, New York. The blade is set up in the same plane as the grinder and then locked into position for automatically correct grinding of each tooth. The grinder will take blades from 5 in. to 16 in. regardless of type or size of bore.



Vertical Band Resaw

Several improvements have been made in their 54-in. vertical resaw according to the McDonough Manufacturing Co., Dept. W, Eau Claire, Wis.

A new type transmission for the feed rolls is a positive gear drive with five speeds ranging from 40 to 220 lineal feet per minute through the feed rollers. All of the gears remain in mesh and the speed change is made by simple lever control.

A New Wood Stain

The Adelphi Paint & Color Works, Dept. W, Ozone Park, New York, announces a high-color wood stain called "Color Grain." One brushstroke of Color Grain, brushed or wiped on the wood, outlines and intensifies its natural pattern, staining the grain in a jewel-bright color, and protects the surface of the wood, preserves it against wear and use. It is said to be fadeproof, scuffproof and scrubbable.

New ECCo Cutter Catalog

Ekstrom, Carlson & Co., Dept. W, 1400 Railroad Avenue, Rockford, Ill. announces their new No. 52 Cutter Catalog. Included are Standard ECCo Router Bits and Form Cutters, Carbide-Tipped Router Bits, Spiral Flute (Taper or Straight Shank) Router Bits, Standard and Special Rosette Cutters, Flat Knives, Blanks and Shaper Steel.

Brochure on TV Lacquers

The Sherwin-Williams Co., General Industrial Division, Dept. W, Cleveland, Ohio, has prepared a new tech-

This Splitter Head is made in any length, up to the width of the machine. With the splitter cutters removed, the round head becomes a standard surfacing head.

Fact is, Diehl Design Engineers solve the trickiest splitting problems—as well as all other cutting problems, too—with their wide knowledge and skill in all phases of wood processing.

For example, Diehl designed this Splitter Head primarily to surface flat stock and cut it into multiples, such as the three square dimensions shown. However, these Splitter Cutters can be made in various forms to produce V or beaded ceiling; for grooving stock, such as drawer sides; or for rounding the corners on casing or like patterns. And, the head shown above can be adapted to efficiently handle these last three operations on small quantity runs. For large quantity, high speed work, special Diehl designed heads, of course, are required. To eliminate your splitting "headaches," write today for full details on Diehl Cutters and Cutterheads.

CUTTER DIVISION

On the Banks of the Wabash

THE G. M. Diehl MACHINE WORKS, INC.

WABASH, INDIANA • U. S. A.

ADHESIVE PRODUCTS
CORPORATION
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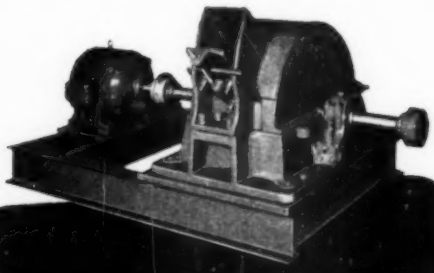
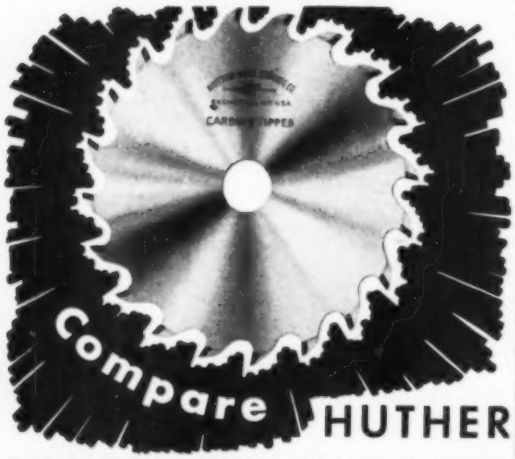
WRITE FOR FREE BOOKLET

M & M utilization equipment
For Soil Conditioning



Let M & M Disposal Equipment turn your waste into profits. These machines are built in many types and sizes for slabs, edgings, trim, blocks, veneer, bark, and other combustible waste. Don't overlook the extra dollars that can come from utilizing every available bit of waste. Send us your problem and we'll show you how M & M Disposal Equipment can solve it.

MITTS & MERRILL
1018 South Water · SAGINAW, MICHIGAN



CARBIDE TIPPED SAW BLADES
with any others and you'll agree they're outstanding. Cut with equal ease thru plywood, laminated wood, teak, fireproof lumber, linoleum, plastics etc. Huther Quality in Carbide Saws is a "standard" among leading craftsmen.
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SAW MAKERS FOR OVER 65 YEARS

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DRY KILNS—20 Tracks of Latest Moore Design Capacity 1 million feet per charge.

DRY SHEDS—Ample storage Adjacent to Carline Means Dry Lumber for you.

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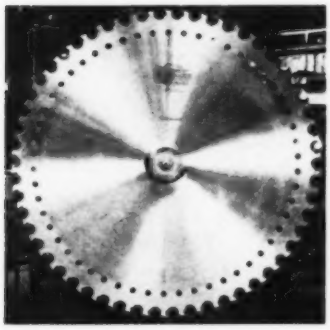
The Ralph L. SMITH Lumber Company

ANDERSON, WPA **CALIF.**

Mills: Anderson & Canby, California
Sales Office: Anderson, California

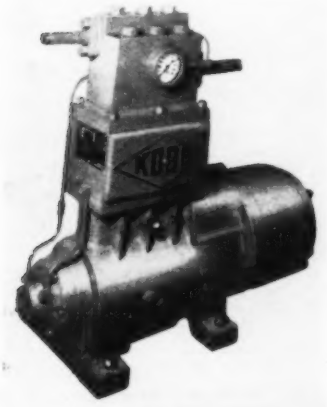
nical brochure on its TV Lacquers, products especially designed for fine furniture including television and radio cabinets.

The new lacquers are described as a "development in quality finishes that meets new problems and opens new possibilities for finer furniture finishing." They were originally developed to meet severe application requirements which resulted from the growth of TV receiver industry.



Inserted Tooth Saw

What is said to be an improvement in circular saw design and performance has just been perfected by E. C. Atkins and Company, Dept. W, Indianapolis, Ind. It is known as an inserted tooth with stabilizing holes of 1 inch diameter in the center of each shoulder. It is said that these holes relieve rim strain, keep the shoulders straight and the bits in better alignment.



High Pressure Triplex Pump

A high pressure triplex pump is introduced by Kobe Inc., Division of Dresser Equipment Co., Dept. W, Huntington Park, Cal., as a heavy-duty packaged hydraulic power generator for all types of hydraulic power systems. It is available in 15, 30 and 50 H.P. sizes with pressure ratings up to 5,000 psi, and displacement ratings up to 60 gpm. Special 10,000 psi and 20,000 psi heads are available.

Its features include integral gears, available in a wide variety of ratios. It can be obtained with an integral, drip-proof Sterling electric motor drive, said to greatly simplify installation problems.

New Power Tools Catalog

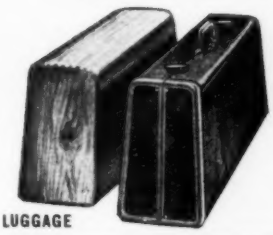
A new 48-page catalog, on power tools for cutting, shaping, drilling and finishing wood, metal, fibre and plastics, has just been produced by Boice-Crane Co. Illustrated and fully described are jointers, planers, band saws, contour saws, drill presses, band filers grinders, jig saws, lathes, belt sanders, spindle sanders, shapers, tilting-arbor saws and saw jointers.

A copy is available from the Boice-Crane Co., Dept. W, 1016 Central Ave., Toledo 6, Ohio.

Plywood Buying Guide Catalog

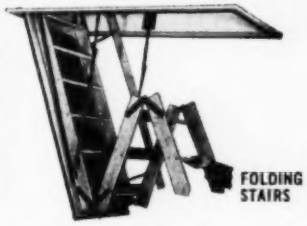
A new 12-page Plywood Buying Guide Catalog is available from Aetna Plywood & Veneer Co. Dept. W, 1731

INDUSTRIAL WOOD PARTS
by WEYERHAEUSER


LUGGAGE

GRAIN CLEANER

TOYS


FOLDING STAIRS

● Leading manufacturers in many industries find Weyerhaeuser a dependable source of supply for wood parts. Blanks of Western softwoods are cut to size for assembly and finishing in their plants. A number of other customers find it more economical to have Weyerhaeuser handle certain of the moulding operations.

Partial or complete fabrication of wood parts by Weyerhaeuser usually means attractive economies by avoiding waste . . . saving freight . . . saving factory floor space . . . speeding assembly . . . reducing inventory through rapid turnover.

Weyerhaeuser's large-scale facilities permit mass production for lower costs as well as for product uniformity. We may be in position to help you simplify your fabrication and reduce costs. A letter will bring you complete details as to how we can serve you in the direction of efficiency and economy.

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Industrial Wood Parts Department

Room 2131 • 400 West Madison Street • Chicago 6, Illinois

A REVOLUTIONARY DEVELOPMENT

VIBRA-FREE*

CARBIDE TIPPED

MEYCO SAWS

You will be interested in this radically new development IF your carbide tipped saws sound like a police siren; IF they develop a "snaky" cut after short usage; IF they dull fast because carbide tips become chipped.

MEYCO VIBRA-FREE* saws embody a new principle in saw design, a new control over vibration by the use of sound absorbing dampers, which eliminate excessive vibration, excessive noise . . . produce smoother cuts, longer life for carbide tips. You get MORE cuts between sharpenings and operators LIKE to use Vibra-Free* blades. Investigate this revolutionary development TODAY. Write for full information and price list.

*T. M. Reg. U. S. Pat. Off.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

W. T. SMITH LUMBER CO.

CHAPMAN, ALABAMA

67 YEARS OF MANUFACTURING YELLOW PINE AND HARDWOODS

Quality Woodworkers choose WAPAKONETA Knives.

"BIG CHIEF" for General Purpose High Production Work.

"MOHAWK" for Southern and similar soft woods

For dependable high speed production use...

Wapakoneta BIG CHIEF and MOHAWK HIGH SPEED KNIVES

THE WAPAKONETA MACHINE CO.

WAPAKONETA, OHIO

INCORPORATED 1891

Custom Processed for the **WOOD-WORKING** industry

UREA

PHENOLIC

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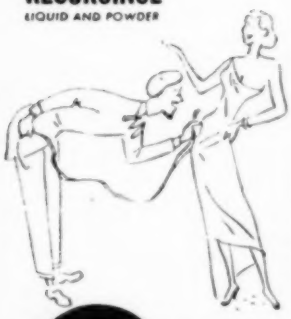
LIQUID AND POWDER

Synthetic RESINS



SYNVAROL WR—liquid resin with various solid content—Non-staining, excellent water resistance and highly extendable. For hot and cold press.

SYNVARITE US, a neat powder—Non-staining, excellent water resistance and highly extendable. For hot and cold press. (Variety of hardeners for all working requirements and non-crazing quality)

SYNVARITE P, Powder Phenolic Resin—For exterior grade plywood, a waterproof bond and short curing cycles.

SYNVAREN, Phenol and Resorcinol Resins—for room and intermediate temperature cures, waterproof bond, excellent for table tops.

SYNVAR VE-50, Polyvinyl-Acetate Glue—for edge and joint gluing.

SYNVAR RESINS

Manufacturers of Fine Resins Since 1939.

SYNVAR CORPORATION

Wilmington 99, Delaware

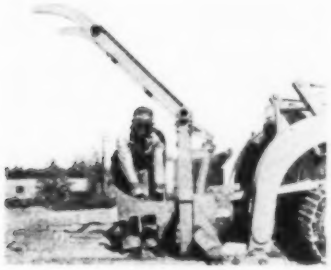
Elston Ave., Chicago 22, Ill.

The catalog shows many plywood installations and products. A whole page is devoted to Parkwood Plastic Laminates. A smartly designed oval conference table, utilizing Sliced Walnut Parkwood Genuwood is the center of attraction.

Power Roller Curve Conveyor

A new, 90 degree, power roller curve conveyor for conveying boxes, cartons and packages around curves—is announced by The Alvey-Ferguson Company, Dept. W, Cincinnati 9, Ohio.

The basic differences in the design of the new A-F 90 degree Live Roller Curve are: the use of tapered rollers which provide efficient package control with no skewing or jamming action—and a simple V-belt drive for quiet, smooth operation with low maintenance cost. This V-belt drive requires no oiling and it can be readily removed without use of special tools and without dismantling the conveyor.

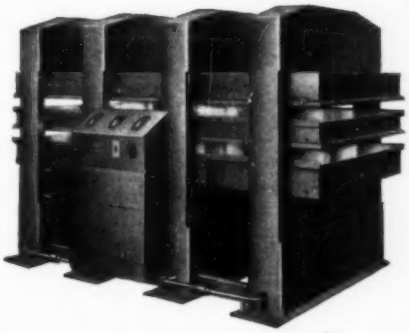


Combination Rack for Skid-Loader

Designed to handle both logs and lumber, a combination rack for Skid-Loader has just been announced by the Drott Manufacturing Corporation, Dept. W, Milwaukee 8, Wisconsin.

With a capacity of 4,000 pounds on International TD-9 and 6,000 pounds on TD-14A tractors, this Skid-Loader combination log and lumber rack is adaptable to piling logs in the yard, handling ties, removing slabs and edgings, and loading green or dried lumber.

the modern design



for increasing production of your veneering and laminating operations

The New

VB hot press

Check ALL these "Years Ahead" features that give you . . . . .

ACTUAL PRODUCTION ADVANTAGES

The modern design of the "VB" Press gives you savings in glue, veneer and labor. After-drying storage space is eliminated and the smoother surface of panels produced eliminates sanding and finishing costs. Compactly constructed, the "VB" Press requires no pit; giving the user a wide choice of placement for more efficient production.

- ALL ENCLOSED FRAME
- ALL WELDED STEAM HEATED PLATENS
- PRE-ADJUSTED WORKING PRESSURE
- COMPACT HYDRAULIC SYSTEM
- AUTOMATIC CONTROL PANEL

Write for Illustrated Bulletin

"VB" Hydraulic Presses are available in single, two, three or four openings.

V.B erthelsen ENGINEERING WORKS, INC.

P. O. BOX 1423 • LOCKPORT ROAD • JOLIET, ILLINOIS

FAMOWOOD . . . the AMAZING . . .

ALL-PURPOSE PLASTIC for wood finishes!

Applies like putty . . . Sticks like glue!

FAMOWOOD is the answer...where wood finishes are important. Simple to use...efficient, lasting, time-saving, when filling wood cracks, gouges, nail and screw holes or correcting defects. Dries quickly, does not shrink. *Stays put* under adverse conditions. FAMOWOOD sands easily, does not gum up sander. *Takes spirit dye stains freely.* Waterproof and weatherproof when properly applied. Ready to use—*"right out of the can."* Fifteen matching wood colors ...with amazing matchless wood finishes.

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FAMOWOOD descriptive literature & price list on request. Distributor & Dealer inquiries invited, write Dept. WP-12

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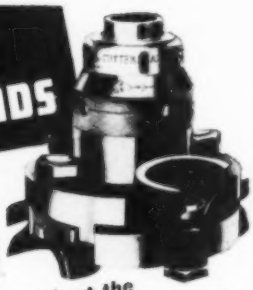
Manufacturers of . . . FAMOWOOD • FAMOGLAZE • FAMOSOLVENT

SHIMER DOOR HEADS



with exclusive all-around clearance cut . . .

will not chip the work at the fastest feed . . . give you high speed, top quality door production with operating economies you'll appreciate!

ECONOMIES ARE BUILT-IN! Shimer circular bits, for example, outwear conventional straight-type bits many times . . . give you 3" to 5" of available cutting edge and are easy, quick to sharpen with the convenient gauge supplied! Also . . . expansion feature gives you wider or narrower panel groove as required!

also . . . SHIMER EIGHT-BIT EXPANSION DOOR HEADS with rail centering feature for high speed moulders

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AUTOMATIC GAUGE
FOR SWING SAWS

SAVES $30 to $50 A MONTH
IN LUMBER AND LABOR
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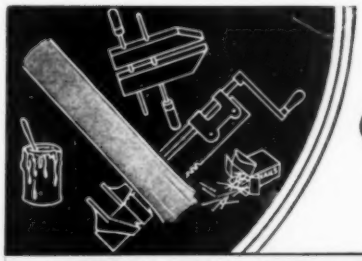
Tannewitz
HIGH SPEED BAND SAWS

Saws faster, smoother and easier than conventional band saws. Regularly increase production from 50% to 100% with consequent reduction of costs. Built by sawing machinery specialists. Write for circular.

THE TANNEWITZ WORKS
GRAND RAPIDS 4, MICHIGAN



CLAMP NAILS

··ECONOMY··

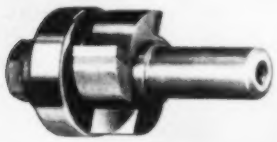
. . . that definitely displaces the old nineteenth century methods of miter joining is the predominating feature of the CLAMP NAIL. The elimination of glue, clamps and other obsolete intermediate joining agents, choked floor space and idle time is permitting the cabinet maker to produce a much improved product at 50% less cost. Every minute you delay, in trying CLAMP NAILS in your own production, deprives you of increased profits and prevents your offering the trade a better piece of merchandise. There is only one genuine CLAMP NAIL.

Write today for CLAMP NAIL Bulletin No. 1

CLAMP NAIL COMPANY

Power Chain Saw

Smallest and lightest of the line of power chain saws manufactured by Titan Chain Saws, Inc., Dept. W, Seattle, Wash., the Titan Series 40 weighs only 34 pounds complete with an 18-in. bar and chain. The single cylinder, two cycle motor delivers power to spare for a 44-in. bar, the largest available for the Titan Series 40 saw. Here shown as a one-man saw, the Titan Series 40 can also be equipped for use by two men, or as a bow saw with a 19-in. capacity.



Flush-Jointing Tool

A new flush-jointing tool for finishing operations on laminated plastic tops is announced by the North American Products Co. Dept. W, Milwaukee, Wis. This carbide-tipped tool enables the jointing operation to be accomplished in portable hand router machines instead of on table type shaper and jointer machines.

Wood Sealers

A "Western palette" of color-toned penetrating wood sealers, designed to preserve wood grain and minimize warping and swelling, is introduced east of the Rocky Mountains by Monsanto Chemical Company's Western Division, Dept. W, St. Louis 4, Mo.

Bulletin of Mortising, Boring, Routing Tools

A new folder, just released, provides a complete condensed reference file on woodworking tools for mortising, boring, routing. Large photographs of the various tools in exact proportion and precise detail are reproduced. These illustrations plus descriptions of work performed by each tool and its specifications give a clear guide to selection of tools for specific woodworking operations. Write to Greenlee Tool Co., Division of Greenlee Bros. & Co., Dept. W, Rockford, Illinois.

MANSFIELD
Dimension
SERVICE

Check these 5 points . . .

1. **LOGS** . . . from Mansfield's perpetual yield timberlands insure our raw material.
2. **LUMBER** . . . selected from 40,000,000 ft. of Hardwoods and Pine produced yearly in Mansfield's two bandmills.
3. **CRAFTSMANSHIP** . . . modern machinery, trained manpower, experience and know-how.
4. **PRODUCTS** . . . though specializing in glued-up panels and moulded stock we are equipped to handle your entire Dimension Stock requirements.
5. **SERVICE** . . . dependable and set up to meet your most exacting requirements.

Send us your specifications today for all your Dimension needs. Prices, samples and delivery dates will be promptly furnished.

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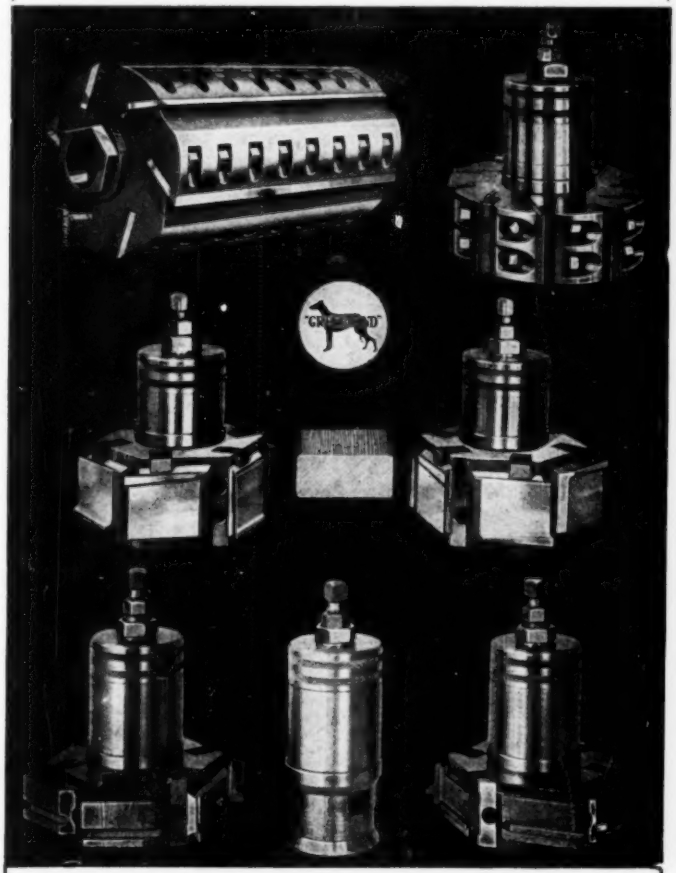
P. O. Box 91 Shreveport, La.
Band Mills: Zwolle and Winnfield, La. . . .
Dimension Plant: Zwolle, La.

CUTTER HEADS - - - For Every Possible Requirement



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SEATTLE 14, WASHINGTON MEMPHIS 3, TENN.

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FOR

immediate shipment

EITHER TRUCKLOAD OR CARLOAD LOTS

Northern Hardwoods

Basswood	4/4 to 6/4
Birch	4/4 to 8/4
Hard Maple	4/4 to 8/4
Soft Elm	4/4 to 12/4

Appalachian Hardwoods

Beech	5/8 to 10/4
Red Oak	5/8 to 8/4
White Oak	5/8 to 8/4

Southern Hardwoods

Ash	4/4 to 8/4
Basswood	4/4 to 6/4
Hackberry	4/4,to 5/4
Sap Gum	5/8 to 8/4
Tupelo Gum	4/4 to 8/4
Red Gum	4/4
Soft Maple	4/4 to 12/4
Sycamore	5/8, to 8/4
Poplar	3/4 to 12/4
Hickory (AD)	8/4
Cypress (AD)	4/4

Mahogany

Honduras	3/4 to 12/4

Walnut

Steamed	5/8 to 8/4

Pine

Parana (Brazilian)	4/4, 5/4

The above hardwoods are in No. 1 Com. & Better Grades

and generally are available in higher grades.

Your inquiry will receive prompt and courteous attention

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Names... Events

Deaths

JAMES W. VELVIN, a Director of the MANSFIELD HARDWOOD LUMBER CO., Shreveport, La., and Vice-President of the FIRST NATIONAL BANK of Lewisville, Ark.

PAUL CORTLAND KING, Vice-President of the INMAN-POULSEN LUMBER CO., Portland, Ore.

GEORGE F. CORNWALL, 58, Editor of The *Timberman*, Portland, Ore.

FRANK R. MCCRACKEN, President and General Manager of the Paoli Chair Co., Paoli, Ind.

Retirements

LESTON L. LEWIS, Salesmanager of the BOOTH-KELLY LUMBER CO., Eugene, Ore., retires after fifty years of service.

New Jobs

C. ARTHUR BRUCE resigns as Director of the Lumber and Wood Products Division of the National Production Authority, and returns to his position as Executive Vice-President of the E. L. BRUCE LUMBER CO., Memphis, Tenn.

JOHN M. CAMP of Franklin, Va. is appointed Director of the Lumber and Wood Products Division of the National Production Authority.

HERBERT B. ATTAWAY, JR. has been named Forestry Agent for the ATLANTIC COAST LINE RAILROAD, with headquarters at Wilmington, N. C.

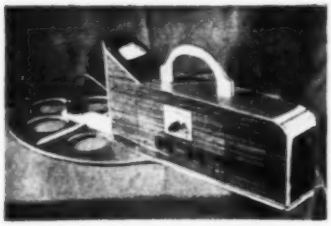
CLAUDE H. LINDSAY has become manager of the TREMONT LUMBER CO. mill at Joyce, La.

PAUL W. BILLINGS has been elected President of the WHEELER-OSGOOD CO., Tacoma, Wash. He succeeds J. H. GONYEA in the presidency. The firm was recently sold to interests represented by J. A. PRITZKER and ARCHIE BLAIR, Chicago and Tacoma attorneys.

M. J. DAUBERT was appointed junior salesman in the greater Chicago area for the WOOD CONVERSION CO. of St. Paul, Minn., and A. L. SPAFFORD, JR., was named industrial products salesman for the Detroit area.

Promotions

HENRY J. LEAF, General Manager of the INMAN-POULSEN LUMBER CO., Portland, Ore., was elected President of the organization. PAUL C. KING,



The Hedden Metal Detector

The Model D.C. II Hedden Metal Detector is being extensively used in the lumber industry. This 10 pound instrument can locate a six penny nail in the heart of a 20-in. diameter log. The unit works both horizontally and vertically and operates on batteries. It is easy and simple to use and operate. The detector head is designed so that an exact fix indicating where the metal is located in the log or wood is quickly obtained. The Hedden Metal Detector is a money saver in saws, veneer knives and downtime. Write for complete information today.

Hedden Metal Detectors
Dept. W
3329 Liberty Avenue
Pittsburgh 1, Pa.

Now, see how little it costs to run a FORD TRUCK in your kind of work

See "the Book" at your Ford Dealer's today!

MILTON B. LUTTON was elected Assistant to the President and HAROLD C. HOWES was re-elected Secretary-Treasurer.

A. R. CAPUTO has been named Sales Manager of the THE AMERICAN BOX CO., Cleveland, Ohio.

J. R. (Jim) COFFING is elected Vice-President in Charge of Sales, Advertising and General Office Administration of the COFFING HOIST CO., Danville, Ill.

ALBERT ARNST will head a new public information office for WEYERHAEUSER TIMBER CO. at Portland, Ore.

DON C. SMITH is appointed Pittsburgh District Sales Manager for the Wood Preserving Division of the KOPPERS CO., INC.

JOSEPH T. THAYER, JR., is named Chief Sales Engineer for HENRY DISSTON & SONS, INC., Philadelphia, Pa.

UNION LUMBER CO., Fort Bragg, Cal., has appointed JOSEPH E. WATT Vice-President; JOHN L. JONES Manager of the company's New York office and JOHN B. GORDON has been made Assistant Sales Manager of the Chicago office.

EDWARD J. MAHONEY has been appointed a Vice-President of the UNITED STATES PLYWOOD CORP., New York, N. Y.

Associations

GEORGE CORRIGAN, Vice-President and General Manager of the CHIPPEWA LUMBER INDUSTRIES, Glidden, Wis., was elected President of the MICHIGAN-WISCONSIN TIMBER PRODUCERS ASSOCIATION of Marquette, Mich.

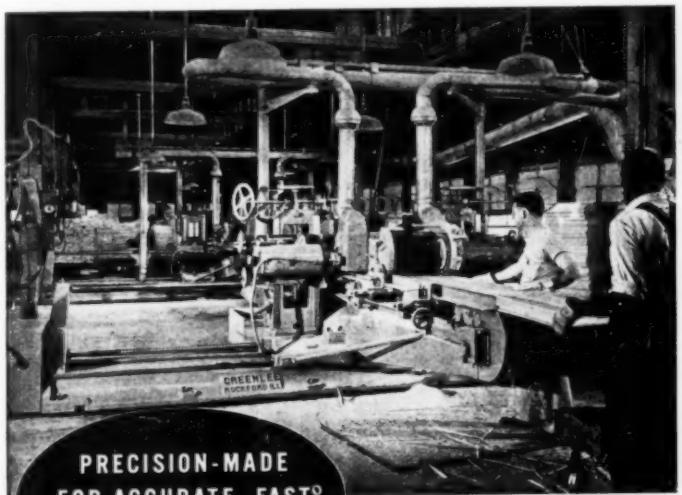
JOSEPH F. MERTES, President of the R. S. BACON VENEER CO., Chicago, Ill., was elected President of THE VENEER ASSOCIATION. Other officers elected were: Vice-President, JOHN L. HUNLOW, Southern Veneer Mfg. Co., Louisville, Ky.; Secretary-Treasurer, R. T. MILLER, Curry-Miller Veneers, Inc., Indianapolis, Ind.; CHARLES E. CLOSE of Chicago was re-elected Executive Vice-President.

The POWER TOOL MANUFACTURERS' ASSOCIATION, 732 Dupont Circle Building, Washington 6, D. C. has been organized with ten charter members, as follows: Atlas Press Co., Boice-Crane Co., Central Specialty Div., King-Seeley Corp., Double A Products Co., Delta Power Tool Div., Rockwell Mfg. Co., Duro Metal Products Co., Logan Engineering Co., Magna Engineering Corp., Famco Machine Co., Walker-Turner Div., Kearney & Trecker Corp. MYRON H. BUEHRER, Vice President and General Manager of the Boice-Crane Co. was elected President of the new association and HERBERT UPTON, President of Double A Products Co. was elected Vice-President. Shopmaster, Inc. and The Emerson Electric Mfg. Co. ad-

WOODICTIONARY

HONEYCOMBING

Checks that occur in the interior of a piece of lumber, often not visible at the surface. Honeycombing usually occurs along the rays.



GREENLEE DOUBLE CUT-OFF SAW IN OPERATION AT STATESVILLE PLYWOOD AND VENEER COMPANY

PRECISION-MADE FOR ACCURATE, FAST° PRODUCTION

...Greenlee No. 542 Electric Double Cut-Off Saw

"We wish to congratulate you on the fine double-end trim saws recently placed in operation here. They show beautiful workmanship and they really do a fine job."

That's what Mr. Elbert M. Shelton, president of Statesville Plywood and Veneer Company, Statesville, N. C., has to say about their new GREENLEE No. 542 Cut-Off Saws.

Reasons are many why the GREENLEE No. 542 does such smooth, accurate work . . . and at high speed! First is because each one is made so sturdily . . . built to handle the work with ease and stand up under production requirements at high speeds for a long, long time.

Next is its "watchwork like" construction and the precise setting arrangement which permits making adjustments to a fraction of 1/64". Accurately graduated dials show the exact setting of the movable housing, and the machine cuts exactly to the size indicated by the dials.

And remember, too, the GREENLEE No. 542 is extremely versatile. In addition to its double cut-off operations, with attachments it will handle your shaping, relishing, tenoning, dadoing or scoring.

Get all the details on this precision machine today. Write Greenlee Bros. & Co., 1932 Twentieth Avenue, Rockford, Illinois

MACHINERY & TOOLS
GREENLEE

GREENLEE WOODWORKING MACHINERY: MORTISERS • BORERS • SAWS • TENONERS • PLANERS • SHAPERS • MORTISING and BORING TOOLS

Finished Dimension

We have some open time in one of our mills for orders for finished, ready to assemble dimension stock.

This can be made from either hardwoods or pine. Interested?

Send us your requirements and specifications today.

L. N. BAGNAL
P. O. Box 2896 Tel. 8115
Winston-Salem 1, N. C.

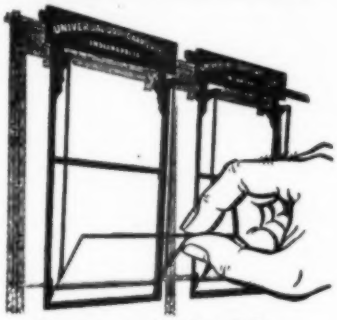
vised of their decision to join.

NATIONAL WHOLESALE LUMBER DISTRIBUTING YARD ASSOCIATION, at its recent convention in Chicago, elected the following officers: President, LAWRENCE S. CLARK, Twin City Hardwood Lumber Co., St. Paul, Minn.; 1st Vice-President, ALVIN HUSS, Huss Lumber Co., Chicago, Ill.; 2nd Vice-President, THOMAS W. FRY, Fry-Fulton Lumber Co., St. Louis, Mo.; Secretary-Treasurer, GEORGE W. BATEMAN, Daniel Buck, Inc., Philadelphia, Pa.

AMERICAN SOCIETY OF TOOL ENGINEERS will hold its Industrial Exposition in the International Amphitheatre, Chicago, Ill., March 17 to 21st, inclusive, 1952.

NATIONAL HARDWOOD LUMBER ASSOCIATION elected the following officers at its recent convention in Chicago, Ill.: LEE ROBINSON, Mt. Vernon, Ala., re-elected President; T. M. MILLETT, Louisville, Ky., JAMES C. WALSH, Chicago, Ill. and HARRY D. GAINES, St. Louis, Mo. re-elected Vice-Presidents, JOHN W. MCCLURE was re-elected Secretary-Manager.

Handle Dry Kiln Doors SINGLE-HANDED?



You can do it with

The Universal **DOOR CARRIER**

One man—with one hand—and a Universal Carrier can open or close a kiln *in a few seconds.* And the carrier makes your doors last longer!—by gentler handling, without twist or strain. Automatic locking gives you good tight closures every time.

Write for further facts!

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1117 Cornell Avenue
Indianapolis 2, Ind.

ARKANSAS OAK FLOORING COMPANY

Pine Bluff, Arkansas

P.O. Box 858 Phone 4300

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SOUTHERN HARDWOOD FURNITURE DIMENSION

Glued-up Panels
Core Stock
Drawer Sides & Backs
Mouldings

"Our 36th Year"

We Solicit Your Inquiries.

Mills at:

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Alexandria, Louisiana.

All Northern Hardwoods

Lumber Veneers Plywoods

NHV

Phone, Wire or Write

NORTHERN HARDWOOD VENEERS, Inc.
Butternut • Wisconsin

LUMBER
Southern Hardwood—Cypress—Yellow Pine
Dry Kilns—Planing Mills

DIMENSION
Edge glued or solid
Machined to specifications

PLYWOOD (Hardwood)
Hot Plate or Cold Press

FLOORING
Oak, Beech, Pecan

HANDLES DOWELS

VENEER (Hardwood)
Rotary cut only

OAK TREADS
Thresholds—Mouldings—Cedar Closet Linings

BOX MATERIAL

Your Inquiries Invited

ANDERSON-TULLY COMPANY

P.O. BOX 28 • Memphis 1, Tenn.
Our 63rd Year
Phones 5-4404 AND LD-361

INDIANA HARDWOOD LUMBERMEN'S ASSOCIATION will hold its annual meeting in Hotel Severin, Indianapolis, Ind., January 25, 1952.

SOCIETY OF AMERICAN FORESTERS will convene for a four-day review of the forest resource situation in Biloxi, Miss., December 12-15, 1951.

The DOUGLAS FIR PLYWOOD INDUSTRY of the West Coast has elected five plywood leaders to the Management Committee for its 69-factory operations. They are: H. W. McCLARY, General and Sales Manager of ANACORTES VENEER, INC., Anacortes, Wash.; H. B. GARRISON, Vice-President and General Manager of EVANS PRODUCTS CO., Coos Bay, Ore.; E. W. DANIELS, Director of Sales for HARBOR PLYWOOD CORP., Aberdeen, Wash.; THOMAS B. MALARKEY, President of M and M WOOD WORKING CO., Portland, Ore., and C. E. DEVLIN, Vice-President in charge of Sales for SIMPSON LOGGING CO., Seattle, Wash.

Carry-overs who were elected to the committee last year are; LEONARD NYSTROM, President of ASSOCIATED PLYWOOD MILLS, INC., Eugene, Ore.; S. R. BLACK, Vice-President of GEORGIA-PACIFIC PLYWOOD CO., Olympia, Wash.; ARNOLD KOUTONEN, General Manager of the plywood division ST. PAUL and TACOMA LUMBER CO., Olympia, Wash., and FROST SNYDER, President of VANCOUVER PLYWOOD CO., Vancouver, Wash.

Developments

The IRON MOUNTAIN plant of the FORD MOTOR CO. has been sold to a syndicate, according to the Fantus Factory Locating Service, Chicago. Latest information indicates that the syndicate plans to dispose of portions of the plant not retained for their own use. These include the sawmill, dimension and wood chemical divisions. The 348,000 acres of Ford timberlands, located near the plant, has also been optioned by the syndicate.

Mergers

The POWELL RIVER CO., Vancouver, B. C., announces that negociations for consolidation of BRITISH COLUMBIA MFG. CO., LTD., WEST MINISTER SHOOK MILLS, LTD., MAPLE RIDGE LUMBER CO., and SALMON RIVER LOGGING CO. have been completed.

UNITED STATES PLYWOOD CORP. announced that it has taken over the management of the PANAMA FOREST PRODUCTS CORP. located in Panama City, Panama.

Expansions

The FOREST FIBER PRODUCTS CO., Forest Grove, Ore., has expanded its facilities sufficiently to double its production of Forest Hardboard.

A $250,000 plant expansion for EKSTROM, CARLSON & CO., Rockford, Illinois was completed in September. Additional new equipment for machining and assembling their line of woodworking and metalworking machine tools is being installed.

The WASHINGTON VENEER CO., Coos Bay, Ore., announces the start of construction of a new peeler plant and sawmill at Greenacres. WILLIAM WESTROPE will manage the operation.

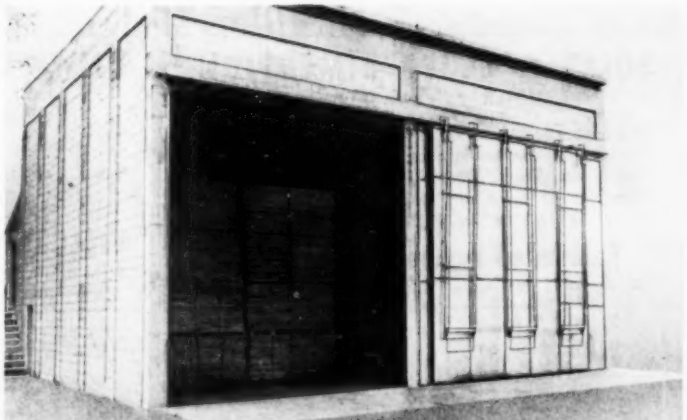
TIMBER STRUCTURES, in northwest Portland, Ore., is gearing for increasing defense orders with a 30,000-square-ft expansion of its two-acre laminating department and addition of new machinery.

The FABRICATED LUMBER PRODUCTS CO. has moved to new and larger quarters at 248 Lorraine Ave. in Upper Montclair, N. J.

NORTH COAST

"DIRECT-FLO"

DRY KLIN



REVERSIBLE CIRCULATION • UNIFORM DRYING

NEW KILNS

KILN MODERNIZATION • KILN ACCESSORIES

The North Coast Dry Kiln is the most efficient kiln in operation today. The Fans are positioned at the sides of the lumber loads so that the air follows the shortest possible "DIRECT-FLO" path. This insures uniform efficient drying with lowest possible power consumption.

We manufacture Kilns to your Specifications.
Write Dept. WK-1, for Dry Kiln Catalog 366.

OFFICES AND WAREHOUSES IN
SAN FRANCISCO, CALIFORNIA
LOS ANGELES, CALIFORNIA
HONOLULU, HAWAII - MANILA, R. P.
VANCOUVER, BRITISH COLUMBIA

C. M. LOVSTED & CO., INC.
ENGINEERS AND MANUFACTURERS
4000 W. MARGINAL WAY · SEATTLE 6, WASH.
PHONE AValon 4000

The PERKINS GLUE CO., Lansdale, Pa., recently began operations at its new Wisconsin Distribution Point in Shawano.

The WEYERHAEUSER TIMBER CO., Tacoma, Wash., is now in operation at the company's new sawmill at North Bend, Ore. The hydraulic barker in use at this new plant is the fourth unit to be installed by the company since the first barker installation at its Longview operation in 1948.

PROCTOR & SCHWARTZ, INC., Philadelphia, Pa., are planning to open a new sales and service branch of their Textile Machinery Division, to be located just outside of Spartanburg, S. C.

SALUTES

(Continued from page 21)

laboratories of nationally known chemists and an advertising campaign was launched on a nation-wide scale.

In 1923, Mr. Lane became president of the firm and has continued to head his company since. Lane Chests are now among the very few makes of furniture which are called for by name throughout this country and Canada.

His two older sons, Edward H., Jr. and Landon B., are now active in the management of The Lane Company. Bernard B. is now a Second Lieutenant in the U. S. Air Force. John H. is a student at Virginia Polytechnic Institute.

Mr. Lane was elected Furniture Industry "Man of the Year" for 1951, the highest recognition the industry bestows on a manufacturer. He is a director of small business with the National Production Authority, a member of the Business Advisory Council of the Department of Commerce.

He is a Methodist, a Mason, a director of the Lynchburg (Va.) Trust and Savings Bank, The Mengel Company of Louisville, Kentucky, the Virginia Manufacturers Association, and a member of the Board of Governors of the American Furniture Mart, of Chicago.

DIMENSION STOCK

SOLID • GLUED UP • MACHINED TO SPECIFICATIONS

SOLID & GLUED DIMENSION
SEMI OR FULLY MACHINED
Our connections have open time available for carlots: Glued Blanks, Mouldings or Cores—from 4/4 Maple, Oak, Gum, Beech, Elm or Pecan. Also 5/16 Oak or Gum Drawer Sides and Backs.
CONTACT GEORGE MABREY
Fabricated Lumber Products Co.
248 Lorraine Ave. Upper Montclair 1, N.J.

PLYWOOD DIMENSION
•
SOUTHERN HARDWOODS
⅜-in. and Thicker—Fully machined, circled, bored, shaped, etc.
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WILLIAM B. COGGIN, INC.
80 E. Jackson Blvd. Chicago 4, Illinois
Telephone HArrison 7-3535

Carlton Smith Industries, Inc.
Glued-Up Furniture Dimension
P. O. Box 326 Phone 23
Bearden, Arkansas

MAPLE BIRCH BEECH
Kiln Dried Dimension Stock
Plain S2S—Machined—Turned
Solid and Glued Up
MICHIGAN DIMENSION CO.
General Office: 666 Lake Shore Drive, Chicago 11, Illinois
Factory: Manistique, Michigan

Here's the place to list your Dimension Stock and sell it quickly. Send us your copy and you will be surprised at the very nominal cost of this space.

Manufacturers of
Precision Kiln Dried
HARDWOOD DIMENSION
Finished and Semi-Finished
FURNITURE & INDUSTRIAL STOCK
Bed Rails, Glued Up Tops & Core Stock
Fordyce Wood Products, Inc.
Box 312W, Fordyce, Arkansas

FINE *Northern*

HARDWOODS FROM WISCONSIN-MICHIGAN

For Every Purpose

The dealer, the builder, the manufacturer, all like these woods of Wisconsin-Michigan. Woods of beauty and utility, they're used in practically every industry. Strong and tough, they resist abrasion and shock. Ideal for exterior and interior building uses, fine furniture, cabinet work, millwork, flooring, veneers. Buy from these leading firms. You can depend upon the quality and service they give.

*Copeland Lbr. Co. - Atlantic and Marquette, Mich.
Sales Office—135 So. LaSalle Street, Chicago—Hardwood Lumber, Dimensions Dry Kilns and Planer.

★

*Goodman Lumber Company - - - Goodman, Wis.
Northern Hardwoods, Hemlock, White Pine, Basswood, Cedar Shingles. Planing mill. Dry kilns. Rotary cut veneers.

★

*†Yawkey-Bissell Corp'n - - - - - White Lake, Wis.
Northern Hardwood and Hemlock Lumber, Maple and Oak Flooring. Members National Oak Flooring Manufacturers Association.

★

*Michigan Pole & Tie Co. - - - - - Newberry, Mich.
Northern Hardwood Lumber, Old Faithful Hemlock, Northern White Cedar Poles, Posts, Shingles, Piling, Soft & Hardwood Ties.

★

Connor Lumber Land Co. - - - - - Marshfield, Wis.
(Mills: Laona, Wis., Connorville, Mich.)
K. D. & A. D. Hardwoods, Hemlock, W. Pine—Cedar Shingles, Posts, Poles—Laona Rock Maple & Birch Flg.—Dimension stock.

★

*Ahonen Lumber Company - - - - - Ironwood, Mich.
AAA Brand Hardwood Flooring
Northern Hardwood, Hemlock and White Pine
Dry Kilns Planing Mill

★

*Member Northern Hemlock & Hardwood Mfrs. Assn.
†Member Maple Flooring Mfrs. Assn.

John H. Klok, Pres.

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VENEERS and LUMBER
AND OTHER
FANCY WOODS

Foreign & Domestic Veneers, Inc.
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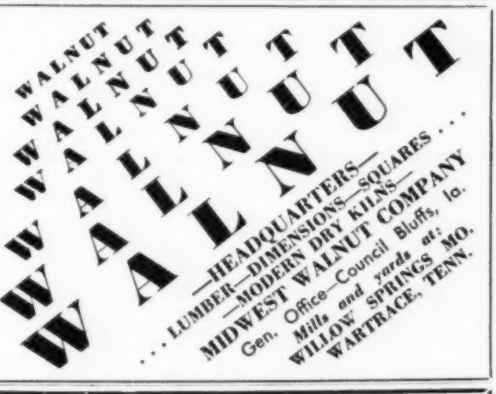
MILLS: KNOXVILLE, TENN.



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For the first time a simple and easy to understand 24-page commercial hardwood identification chart is available for both the expert and beginner. This chart places similar woods and their features side by side and plainly points out the differences which separate one from another.

Covers 28 most important hardwoods—makes visual wood identification accurate and easy with just the naked eye and a hand lens. A simple, workable, one-source reference for only $1.00. Copies will be mailed immediately. Send your order to:

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Brooklyn 11, N. Y.

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Chicago 21, Ill.

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Frary Wood Turning Co., Inc.
Wilton, Me.

Charlemont Wood Turning Co., Inc.
Charlemont, Mass.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Ottawa Woodcraft
824 Madison St.
Grand Haven, Mich.

E. W. Hannas
95 Liberty St.
New York, N. Y.

Geo. T. Frost & Son
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Hoge Lumber Co.
New Knoxville, Ohio

Levenson Woodturning and Manufacturing Co.
8755 South Broadway Place
Los Angeles 7, Calif.

Northern Mill & Turning Co.
3524 Martens St.
Franklin Park, Ill.

E. L. Bruce Co.
1692 Thomas St.
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DOWEL RODS & PINS

Anderson-Tully Co.
P. O. Box 28
Memphis 1, Tenn.

Grand Rapids Dowel Works
701 W. Burton Street
Grand Rapids 9, Mich.

The Dowel House
Chicago 21, Ill.

C. B. Cummings & Sons Co.
(Mfgr's.)
Norway, Maine

O. L. Baker & Son
21371 North St.
Euclid, Ohio

Henry Rowe Mfg. Co.
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Saunders Brothers
Westbrook, Maine

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Stratton, Me.

Henry Rowe Mfg. Co.
Newaygo, Mich.

The Dowel House
Chicago 21, Ill.

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Paterson 4, N. J.

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1692 Thomas St.
Memphis, Tenn.

C. B. Cummings & Sons Co.
Norway, Maine

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Memphis 1, Tenn.

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Kingfield, Me.

The Stratton Co.
100 Main Street
Stratton, Me.

Allen Rogers Corp.
54 Water Street
Laconia, N. H.

Boss Whipple Mfg. Co.
Fourth Ave. and South St.
Union City, Pa.

The Dowel House
Chicago 21, Ill.

Geo. T. Frost & Son
Paterson 4, N. J.

Henry Rowe Mfg. Co.
Newaygo, Mich.

O. L. Baker & Son
21871 North St.
Euclid, Ohio

C. B. Cummings & Sons Co.
Norway, Maine

ROPE MOULDINGS

Klise Mfg. Co.
Grand Rapids 2, Mich.

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H. G. Winter & Sons, Inc.
Kingfield, Me.

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Stratton, Me.

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Grand Rapids 9, Mich.

Wm. J. Oberdorfer, Inc.
Glendale, N. Y.

The Dowel House
Chicago 21, Ill.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Klise Mfg. Co.
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Paterson 4, N. J.

ORNAMENTAL TURNINGS

Henry Rowe Mfg. Co.
Newaygo, Mich.

STRAIGHT WOOD PARTS

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P. O. Box 28
Memphis 1, Tenn.

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

FURNITURE & CHAIR PARTS

Anderson-Tully Co.
P. O. Box 28
Memphis 1, Tenn.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Klise Mfg. Co.
Grand Rapids 2, Mich.

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

Hourigan Manufacturing Works
2801 Roanoke St.
Chattanooga, Tenn.

SPECIAL TURNINGS

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The Stratton Co.
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Stratton, Me.

Lignum-Vitae Products Corp.
151 Boyd Avenue
Jersey City, N. J.

The Dowel House
Chicago 21, Ill.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Geo. T. Frost & Son
Paterson 4, N. J.

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

BUNGS & PLUGS

Henry Rowe Mfg. Co.
Newaygo, Mich.

KNOBS—WOOD

H. G. Winter & Sons, Inc.
Kingfield, Me.

The Stratton Co.
100 Main Street
Stratton, Me.

Allen Rogers Corp.
54 Water Street
Laconia, N. H.

Henry Rowe Mfg. Co.
Newaygo, Mich.

Geo. T. Frost & Son
Paterson 4, N. J.

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Anderson-Tully Co.
P. O. Box 28
Memphis 1, Tenn.

The Stratton Co.
100 Main Street
Stratton, Me.

Grand Rapids Dowel Works
701 W. Burton Street
Grand Rapids 9, Mich.

The Woodcraft Corporation
Bay City Mich.

Bennett Lbr. & Mfg. Co.
Zeeland, Mich.

Hoge Lumber Co.
New Knoxville, Ohio

Henry Rowe Mfg. Co.
Newaygo, Mich.

Geo. T. Frost & Son
Paterson 4, N. J.

Curry Wood Products Co.
260 W. Broadway
New York 13, N. Y.

Klise Mfg. Co.
Grand Rapids 2, Mich.

E. L. Bruce Co.
1692 Thomas St.
Memphis, Tenn.

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North Waterford Spool Co.
North Waterford
Maine

H. G. Winter & Sons, Inc.
Kingfield, Me.

The Stratton Co.
100 Main Street
Stratton, Me.

Henry Rowe Mfg. Co.
Newaygo, Mich.

MOULDINGS—CARVED TURNED & EMBOSSED

Forsyth Manufacturing Co.
2246 W. Kinzie
Chicago 12, Illinois

Klise Mfg. Co.
Grand Rapids 2, Mich.

AUTOMATIC SHAPED PARTS

Hourigan Manufacturing Works
2801 Roanoke St.
Chattanooga, Tenn.

WOOD TRADING POST

139 N. Clark St., Chicago 2, Ill.

Trading post ads must be in publisher' osffice 10th of the month preceding month of publication. Illustrat ons must be limited to ½ size of space used. No reverse plates. Publ sher reserves right to classify, edit, or reject ad. Space sold only in 1-in. units—Size 1-in. deep x 2 3/16 in. wide. Cost, $10.00 per in., cash in advance. No agency commission or cash discount allowed. 5% discount allowed if payment is made in advance for 1 yr.

Trading Post
c/o WOOD/WOOD PRODUCTS
139 N. Clark St., Chicago 2, Illinois

LUMBER, PLYWOOD, ETC.

VENEER WOOD

8,000 ft. 1/8" Maple, Grade A
10,000 ft. 1/24" Poplar, Grade B
10,000 ft. 5/32" Poplar, Grade B
10,000 ft. 1/16" Poplar, Grade A
12,000 ft. 3/16" Poplar, Grade A
1,200 ft. 3/16" Poplar, Grade B
1,500 ft. 3/16" Poplar, Grade B
4,500 ft. 1/8" Gum, Grade B
4,000 ft. 5/32" Gum, Grade B
12,000 ft. 1/16" Poplar & Gum, Grade B
1,000 ft. 5/32" Poplar, Grade B
1,500 ft. 1/8" Poplar, Grade B

1 1/2 cents per sq. ft.

MARLEAU-HERCULES

3600 Detroit Ave. Toledo 12, Ohio

WEST COAST LUMBER

Kiln Dried Douglas Fir Industrial Clears All thickness to 16/4

Millwork Stock Rough or Surfaced Mouldings, Ladder Rails and Cut Stock

Al Clements Lumber Co.

PO Box 908 Eugene, Oregon
TWX EG 049 Phone 5-3317

HIGH QUALITY ROTARY CUT GUM AND POPLAR VENEERS

Lengths up to 98"

GUM PLYWOOD

Cut to size Furniture Panels, Small Stock Panels

CLARKE VENEERS AND PLYWOOD
Box 1482-W, Columbia 1, S. C.

BOX LUMBER

Rough — S2S — Resawn Center
4/4" - 5/4" - 6/4" - 8/4"
Gum, Tupuelo, Elm, Cottonwood
Willow, Yellow Pine and Misc. Hardwoods

CRAIG LUMBER CO.
325 Falls Bldg. Memphis 3, Tenn.

ANDERSON-TULLY CO.
Memphis, Tenn.
BOXES AND BOX MATERIAL
Box Factory Lumber
Southern Hardwood
Edge glued and solid dimension
Poplar, Gum, Oak or Beech

Stimson Lumber Co.
Hickman, Ky.
Manufacturers of Mississippi River Cottonwood and Willow

FOR SALE

4/4 5/4 6/4 8/4 D&btr soft Ponderosa Pine kiln dry rgh or s2s straight or mixed cars. Ellingson Lumber co., Klamath Falls, Oregon.

HELP WANTED

MILL & CABINET SHOP OFFICE MAN with drafting experience to train for future executive position as Manager of small plant with excellent reputation for high class mill and cabinet work. Applicant must have had some experience and must be able to meet and work with Architects and Builders. If applying by mail give full information on background. Santa Barbara Mill & Lumber Company, Santa Barbara, Calif.

WANTED

Machine Production Supervisor for medium-size quality television cabinet plant Eastern Pennsylvania vicinity. Must be thoroughly experienced in all phases of tooling, methods, and supervision of modern high production woodworking machines. Give complete experience, including salary expected. Address replies to Box A 172, WOOD & WOOD PRODUCTS.

ENGINEER WANTED

MECHANICAL DESIGN ENGINEER, lumber mill experience, for work in our central consulting offices in Houston. Prefer design and layout experience in lumber mill sawing, sorting, handling, planing machinery, conveyors and equipment, log barking and chipping plants. Describe qualifications and training in writing.

H. E. BOVAY, JR.,
CONSULTING ENGINEERS
ESPERSON BUILDING
HOUSTON 2, TEXAS

WANTED

First class wirebound superintendent for large industrial wirebound operation. A Louisiana location. Reply Box A 171 WOOD & WOOD PRODUCTS.

BOX NAILS FOR SALE

6D and 8D Box Nails made by old established European mills available for prompt delivery. Also, common, finishing and plasticboard nails. Triton Company, Inc., 110 William St., New York 38, N. Y.

MACHINERY

Box Dies — Steel or Rubber Type —Stock or Custom Strip Printing on Boxes, Cartons and Cases

PIERCE WRAPPING MACHINE CO.
625 W. Jackson Blvd.
Chicago 6, Ill.

FOR SALE
AUTO NAILER
SPARTAN MODEL

Used approx. 20 hrs. Makes, drives and sets 3 nails a second—in all materials. Used extensively for nailing cabinets, luggage, valances, furniture, masonite, etc. Change in our design eliminated the use for this machine. Write or phone

The Monmouth Container Corp.
Matawan, New Jersey

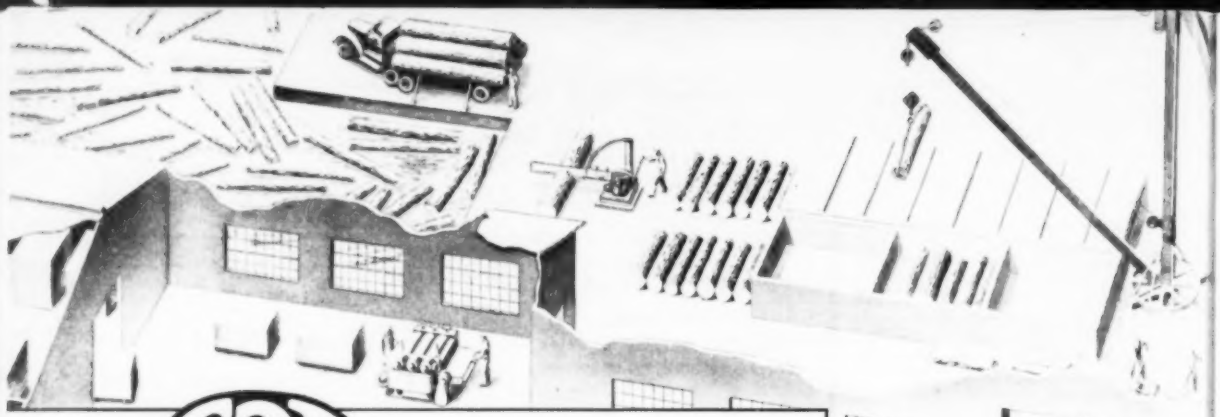
MINER'S EDGER with SKF BALL BEARINGS

Lightest running edger—variable feed control with feed-belt tightener—guide rail and spurs make straight lumber—well-balanced mandrel—creosoted frame—OUR 25-YEAR REPUTATION IS YOUR BEST GUARANTEE.

MINER EDGER WORKS, Inc.
Meridian, Mississippi

FOR SALE, MISC.

New Zealand tree fern vase, Design and color result of Nature. Not for sale elsewhere, Postpaid, medium $7.50, large $9.00. Wood Collectors' Society, Box 2, Port Arthur, Texas.



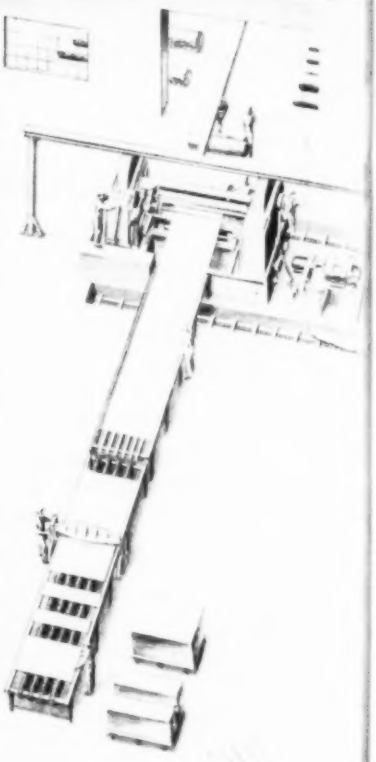
for a COE-ordinated VENEER PLANT

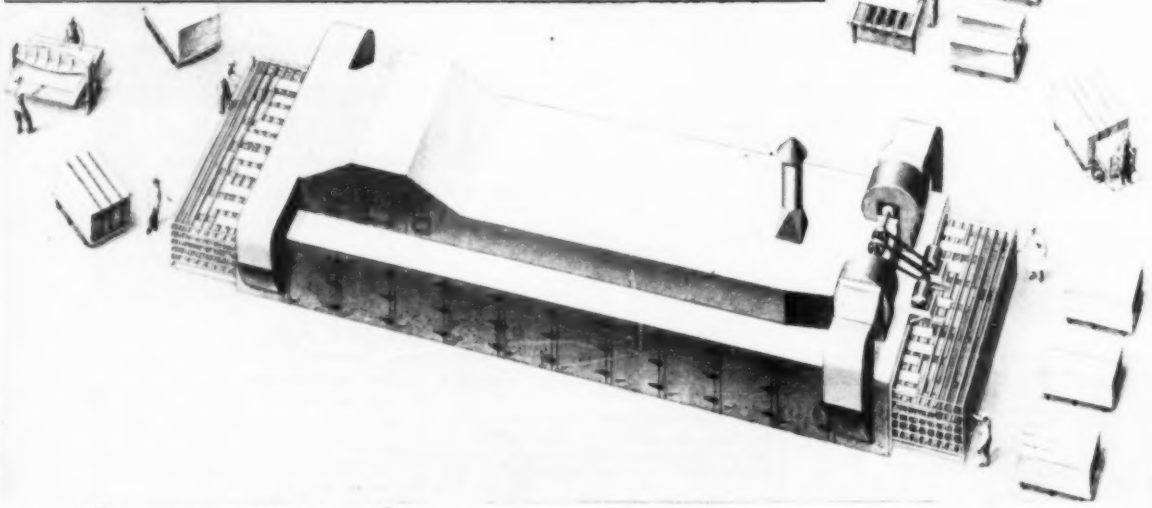
Efficient production of veneer and plywood depends not only upon the performance of each individual machine, but also upon the performance of each machine with respect to other machines in the production line and to the overall plant layout.

The elimination of bottlenecks in your production line is essential for efficient production.

For the biggest part of a century, Coe has continually developed new equipment and studied overall production problems for various types of veneer plants.

Coe engineers welcome the opportunity of discussing any problems whether large or small pertaining to the production of veneer.





The **COE MFG. *Co.***

316 Bank St. • Painesville, Ohio

LATHES • CLIPPERS • DRYERS • KNIFE GRINDERS

BARREL & BOX & PACKAGES

Wood Packing Pays

Barrel and Box and Packages, is a section of Wood combined with Wood Products, devoted to serving the best interests of the wood container industry.

The Barrel-Turning Lathe

By JOSEPH B. WAGNER

After barrels are "headed-up," they are placed in a lathe to smooth the outside surface of the staves by the use of a jack plane. In some instances, instead of using a jack plane, they are smoothed by means of a sanding belt. Either method is satisfactory. *Too much* wood must not be removed by the plane or in the sanding process. Otherwise, the staves may become so thin that the barrel is weakened and the staves may "give" at the joints when the barrel is rolled upon its bilge after it has been filled. This is liable to cause leakage through any one of the numerous stave joints. For that reason the least amount of wood should be removed in the smoothing process.

It is considered unnecessary that the saw teeth marks be removed from the face of the staves, as an occasional small spot left on the surface of the barrel will indicate that the staves have not been planed away unnecessarily, and this insures a stronger barrel. In some instances, the planing of the outside surface of the staves is eliminated entirely. This insures a barrel that will carry its contents in a more satisfactory manner. Also, it will withstand the many abuses from rough handling to which it is subjected after being filled.

When the outside surface of tight barrels are not to be planed or sanded, extra care is necessary to bring the staves into perfect alignment at their joints *before* the barrel is trussed. This insures as smooth a surface on the outside as it is posible to make them.

In some barrel plants, both bilge truss hoops are removed so the entire surface of the barrel may be planed or sanded at one operation, but some experienced operators do not consider this good practice. They claim that this method invites trouble. They contend that when both bilge truss hoops are removed from the barrel, the staves are liable to spring outward at the bilge when the barrel is "chucked" in the lathe. Thus, joints are often disturbed and may not return to their original position when the barrel is released. When this occurs, it injures the quality of the barrel. Leakage may occur through any of the numerous joints. Furthermore, a slight sliver of wood may become lodged in any of these joints during the planing process. This would cause leakage through that particular joint. However, this would not likely occur when barrels are sanded.

In some plants, only one-half of the barrel is planed at a time, the other half retaining the bilge truss hoop until *after* the half that has been planed has been fully "hooped". The barrel is then returned to the lathe for its final planing. While this method does entail a slight amount of extra labor, it is more satisfactory, for the stave joints are not disturbed and a better quality barrel is assured.

The problem of the tigh. cooperage industry today calls for a battle against the substitute container, which is gradually making greater inroads upon the business that rightfully belongs to the "tight" barrel.

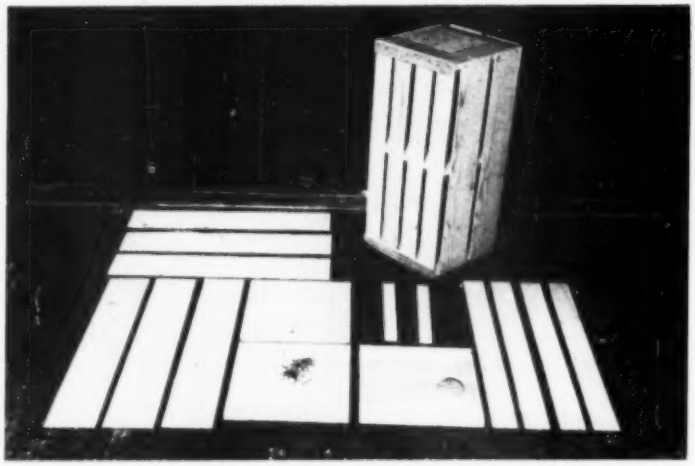
There is usually a short runway leading from the barrel lathe or sanding machine upon which the barrels roll after being planed or sanded. At the end of this runway are located four small rollers upon which the barrel is placed and revolved slowly to facilitate the search for seed and worm holes. When "plugging up" seed holes, use a small square-pointed punch to enlarge them sufficiently so that worm pegs may be driven in at least to half of their length. With the ordinary worm hole, a punch is not always necessary, as these holes are larger and the pegs usually drive in more satisfactorily.

In grinding the bit used in these barrel planers, they should be ground with a slightly rounded cutting edge, so the corner of the bit does not gouge into the staves as the plane moves across the surface of the barrel. The bevel of the knife or bit should be ground to about a twenty degree angle, and be only slightly longer than one and one-half times the thickness of the knife. A shorter bevel makes a stronger, longer lasting cutting edge. This is particularly true when planing barrels made of the oaks or other hardwoods.

WOODICTIONARY

COMPRESSION SET

A condition in which some of the outer fibers in a piece of wood are permanently compressed as a result of the piece being restrained from swelling while taking on moisture.



Finished orange crate and the pieces of shook needed to produce it.

No Boxes-But Shooks

Fine Economies in Wood Container Production Are a Sizeable Contribution to the Forest Industry's Program of Whole Crop Utilization

By ALBERT ARNST
Weyerhaeuser Timber Co.

"Where are the boxes?"

That's the usual naive question asked by a visitor who for the first time tours a typical box factory.

Although the finished product is indeed conspicuous by its absence, the raw ingredients for thousands of boxes are being prefabricated even while the visitor is still getting over his initial surprise.

A box factory produces only "shook," which is the mill man's name for unassembled boxes—tops, sides, ends and cleats. Shook is shipped to packers in bundles, the packers assemble the varied containers which package much of the West Coast's fresh fruit and vegetable crop so it can be shipped to the nation's markets. Nails and wire stitching bind the pieces into sturdy containers for oranges, lettuces and apples and other edible commodities. Boxes are also made for blasting powder. Miscellaneous items include surveyor's stakes.

Box Factory a Salvage Plant

To the forest products industry, a box factory has special significance. It is a salvage plant, creating from wood leftovers economic values which otherwise might be lost. In the ponderosa pine region of eastern Oregon and Washington and in other pine-growing areas, the box factory is the by-products plant that recovers the last bit of value from a log and in many instances puts a mill waste-burner out of work.

Pine trees, like all timber grown "wild" by Nature, contain wood in grades not entirely suitable for top-quality interior finish, sash and specialty items. Knots, structural defects, blemishes and bark wane may make clear lumber available only in short lengths. It is the box factory's important function to break down long pieces of this kind of lumber into smaller sound and usable pieces, by gradually trimming out defects and then rebuilding the resulting segments into bigger ones.

The fascinating "little-block-from-big-pieces" manufacturing drama is enacted by comparatively small machines—singing cut-off, rip and band saws, aided by miles of conveyors and special gluing, sanding and stitching machines. There is no rhythmic throb of giant hydraulic barkers or the thunder of huge chippers chewing logs into pulp fodder, but the box factory is equally important in the forest industry's long range program of whole crop utilization of timber.

Weyerhaeuser Timber Company's big pine mill at Klamath Falls, Oregon is a good example of how shook is made in a modern box factory. Recovery of sound wood milling leftovers is so complete that the dome-shaped trash burner has been out of work for many years.

In this bee-busy plant the rows of saws, resaws and trimmers are designed for but one function. They progressively reduce big pieces in length, width and thickness to sizes which alone or in glued-up combinations make up the sides, tops, bottoms and ends for containers. The endless possibilities in reworking the original material are dependent upon skill and judgement.

In this and other box factories, women are important associates. They comprise about forty per cent of the working force at Klamath Falls. Because of their skill and quickness, they offbear tie or "hikeaway"—the term used for transferring small stacks of shook from one place to another.

Salvage Highest Volume of Wood

Usually men operate machines, such as cut-off saws. They must be able to salvage the highest volume of usable wood from a board and at the same time eliminate undesirable defects.

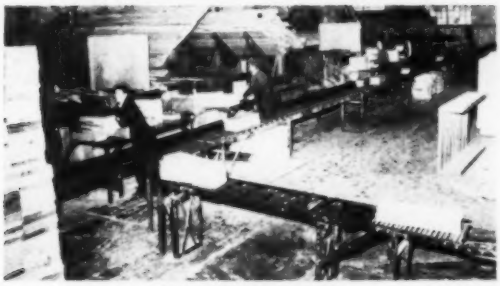
Kiln dried lumber for the box plant is brought to the storage shed by crane from the planing mill; usually it is 6/4 (1½ thick) stock in widths up to 12 inches. It is moved to position in packages brought in on small trucks, running on rails. Loads are transferred either to tilt-tables, which feed six of the ten cut-off saws, or to platforms, supplying the other four cut-off saws.

The first six cut-off saws are closely grouped with each two operators standing back to back. The man operating each machine drops a board from the tilted pile and places it on a carriage rocked back and forth by body weight. The board is then pushed edgewise through a high speed circular saw. By expert manipulation the long board is quickly reduced to smaller blocks which drop on rollers to a table on a slightly lower floor level, where an offbearer picks up, stacks and places them on a moving rubber belt. The belt feeds to various other machines, such as resaws, cleat machines and rip saws.

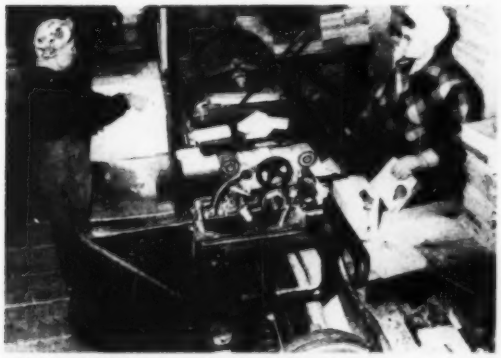
The other four cut-off saws handle other types of lumber input besides the standard dimension stock. Two work on random width boards; one is

(Continued on page 78)

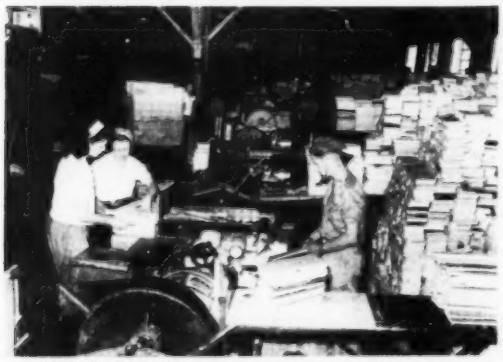
Weyerhaeuser Shook Sequence



CUT-UP department



CLEAT-MAKING rip resaw cuts blocks into narrow strips



SMALL BLOCKS are re-cut into cleating stock

TRADE NAMES are printed on box ends by special machine

THE RIGHT *Container Wire* FOR EVERY JOB

★ Development of new products . . . constant revamping and improvement of old products . . . increasing specialization of industry . . . and changes in marketing methods—all give birth to a steady stream of problems in the handling and shipping of merchandise.

Where container wire is needed to solve these problems, you'll be wise to rely on Mid-States' wide experience and up-to-the-minute know-how.

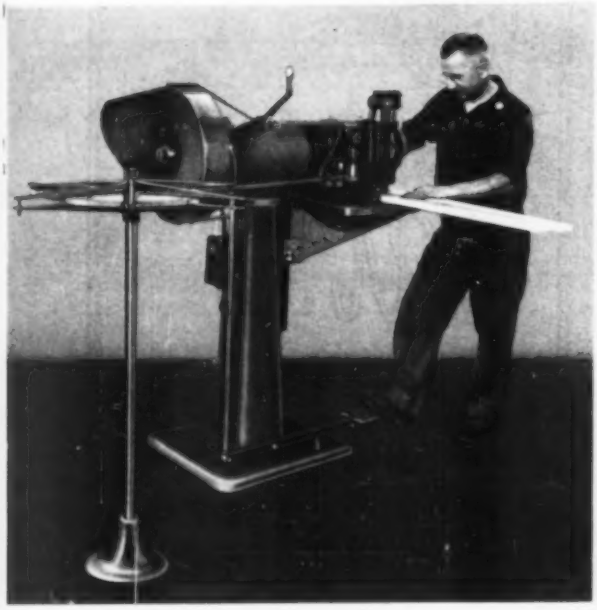
Mid-States pioneered the first industrial wire for containers nearly half a century ago . . . and today, Mid-States is recognized by users throughout the nation as *headquarters* for stapling, box-binding and handle and loop wire in all finishes.

It pays to be sure you're getting the right wire for your particular job. It pays to do business with the leader—Mid-States.

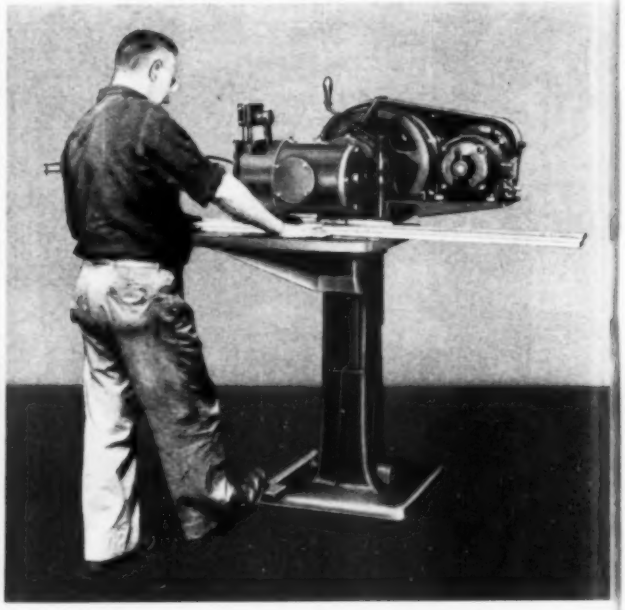
MID-STATES
STEEL & WIRE COMPANY
CRAWFORDSVILLE, INDIANA
JACKSONVILLE, FLORIDA

LOW-COST SPLICING

WITH SARANAC CORRUGATED FASTENER DRIVERS



No. 1RA—Handles any length stock—open end, open sides. This view shows fastener driving unit and motor drive.

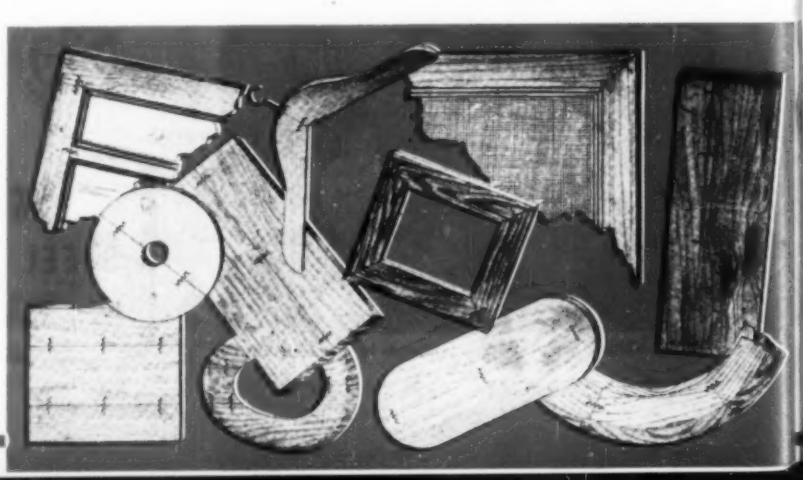


No. 1RA—Showing reel for corrugated ribbon. Operator has both hands free to move and hold stock.

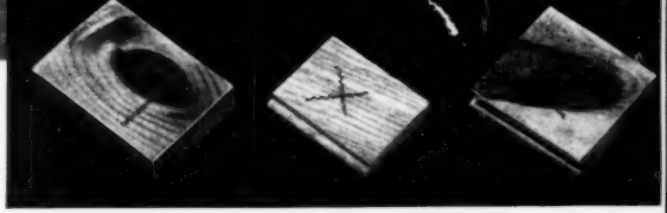
HERE'S THE WAY SARANAC SAVES MONEY FOR YOU

- One man with a Saranac will accomplish as much or more than 4 men using hammers and pre-cut fasteners.
- Fastener ribbon purchased in coils for use on Saranac machines *costs 28% less* than the equivalent number of pre-cut fasteners.
- Saranac machines can use and drive all makes of standard corrugated fastener stock.
- Saranac machines accept corrugated steel ribbon from 1/4" to 3/4" wide inclusive and are adjustable to cut off and drive fasteners from 3/4" to 1-1/2" long, inclusive.

SARANAC SPLICERS will save money wherever corrugated fasteners can be used! On ammunition boxes and other production splicing jobs —and by turning wood scrap into usable material— you can save plenty with a SARANAC SPLICER. Only a few of the hundreds of uses are illustrated at the right.



THAN FOUR MEN WITH HAMMERS!



NO. 1 MODEL SPLICER FOR SHORTER PIECES

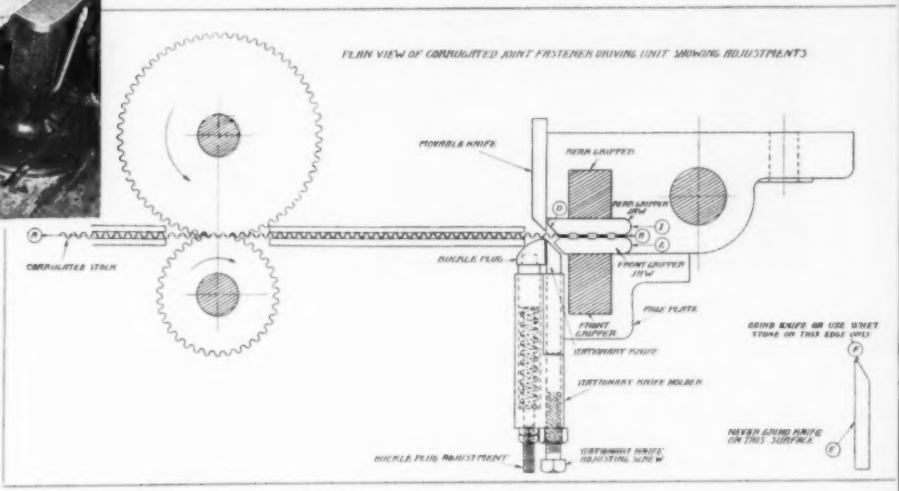
The No. 1 machine is recommended for box shooks, general splicing and salvage of pieces 16" in length and under. Like the No. 1RA, it is a versatile, dependable machine for making low-cost splices. Fasteners are always driven uniformly. The joint is *tight*. And fasteners may be driven flush with the surface or slightly below if desired. Every wood-splicing job from joining coat hangers to making ammunition boxes is being performed on these machines

Look at these samples of the power and precision of Saranac Corrugated Fastener Drivers. Notice that one fastener can be driven right through another in an oak board! Saranac machines will join soft wood, hard wood or a hard board to a soft one. They'll even anchor loose knots! Saranac fasteners are always uniform. Because they're driven straight, they give you tighter joints and better holding.

ONE MAN DELIVERS ASTONISHING OUTPUT!

In production, these single head splicers are practically equal to multiple head splicers which cost a great deal more. There is no set up time required on a single head splicer.

Operator can leave his foot on clutch treadle and move work between strokes of the driving head where two or more fasteners per face are required. On a multiple head machine, clutch must be engaged separately for each stroke. In actual working conditions, this practically eliminates the advantage of costlier multiple head drivers.



PLAN VIEW OF POSITIVE FEED AND CORRUGATED FASTENER UNIT.

For versatile, low cost splicing investigate Saranac's Corrugated Fastener Drivers. Send samples of your job or sample work pieces to be spliced if you wish. Write for prices and recommendations.

SPECIFICATIONS

SARANAC MODELS No. 1 and No. 1RA

Crated Weight, Approx.	1350 lbs.
Export Weight, Boxed, Approx.	1430 lbs.
Case Dimensions, one case 42"x49"x65"—74 cu. ft.	
Floor space required (working area)	6' x 6'
Machine strokes per minute	80
H.P. Required	3/4

SARANAC MACHINE COMPANY
BENTON HARBOR, MICHIGAN

MANUFACTURERS OF THE WORLD'S LARGEST LINE OF FASTENING MACHINES

(Continued from page 74)

an equalizer which cuts two-foot long trim pieces, and one converts scrap lumber into blocks.

Cleat machines make their product from the "fall down" of the cut-off saws and are frequently operated by women. Cleats are used for strengthening boxes. The material from which they are made is too narrow for conversion into box ends.

Six band saws lined up in a single row, are synchronized for additional block breakdown. Each machine has two vertical band saws. Blocks from the cut-off saw are fed through an edge and are cut into three thicknesses. Two or more machines can be connected by troughs, so that blocks already sectioned can be cut into still thinner pieces. Blocks go automatically through each band saw, with men feeding and women offbearing.

Some of these thin pieces may move directly by belt to the two tie-up machines, where they are bound with wire into unit bundles. Other pieces may go to stitching machines which staple the thin slats together into container covers.

On the stitcher three girls place the shook pieces singly on a moving chain which carries them through the stitcher. Women are adept at "dealing" the thin shook onto the slotted chain. Tomato and grape lug covers, pear box and orange box covers are made here. Carried by belt in small stacks, the covers proceed to the tie-up machine for bundling.

In the lay-up department, blocks are ripped and the pieces built into larger box ends, after the individual pieces are tongued and grooved. Machine feeders are men and offbearers women. Lay-up work requires a high degree of skill and experience to obtain the most value from the stock on hand.

Two nailing machines make up box ends. One cleats ends for industrial use and the other makes vegetable box ends. Besides Nailed-up ends, solid box ends are made on other machines by tonguing and gluing small pieces together.

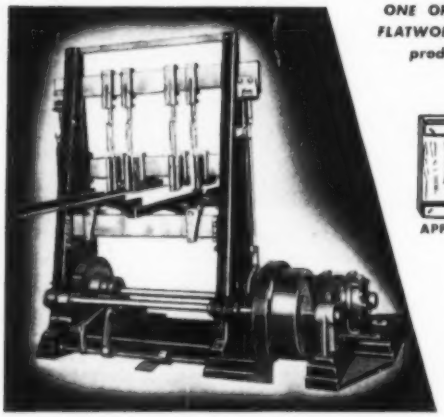
Trade Names Printed on Boxes

A printing machine emblazons trade names in bold colors on shook destined to become a box. It is similar to any printing press, except that the die is brass. The printer is adjacent to the tie-up machines, so that printed shook can be bundled conveniently.

Bundled covers, ends and sides proceed by conveyor from the tie-up machines to the basement warehouse for storage or direct shipment. The entire plant basement is chock full of the thousands of assorted blocks and slats which make up the various types of containers. Bundles are placed on forms or pallets and transported to the shipping platform or moved around the warehouse.

Thus from the seeming chaos in unrelated thousands of assorted sizes of wood blocks, flowing on conveyors in all directions in apparent confusion, emerge parts for thousands of containers. When you buy your next crate of oranges at the grocery store, visualize the intricate wood utilization process of sawing, trimming and stitching which has produced this useful container. The box factory at Klamath Falls is another one of the links Weyerhaeuser has forged in fabricating its chain for harnessing tree farm crops to produce more products from less wood.

WORK SIMPLIFIED
in the CRATE INDUSTRY



ONE OPERATOR plus ONE FLATWORK STAPLER equals production records.

APPLE BOX END

BERRY CRATE COVER

St. Joe Hand Feed Flatwork Stapler MODEL 131

TOMATO LUG COVER

It's all in the days work for the St. Joe Fatwork Stapler. Yes, when you have schedules to fill for many different styles and sizes of crates—you can realize the important part one St. Joe Flatwork Stapler can play in your program.

A few of the many patterns produced on this one stapler.

Let us show you how this one has simplified the crate industry, and how it can make your work easier too! Send for complete data in bulletin No. C-2

1877 **St. Joe Machines, Inc.** 1951

IT'S ST. JOE TODAY!...FOR STAPLING MACHINERY

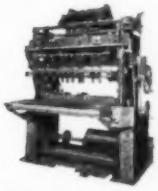
ST. JOSEPH MICHIGAN

You get more Features, News, and Stories in WOOD combined with WOOD PRODUCTS than any other industry magazine—Subscribe Now. 3 years $5.

You pick the pattern...

THE fmc INDUSTRIAL CENTER-LINE NAILER

WILL PICK *and drive* THE NAILS...!



fmc EDGE NAILER —Embodies most features of standard industrial center-line nailer but special chuck arrangement permits work to pass in front of machine for edge nailing, crate and edge box framing, cleating.

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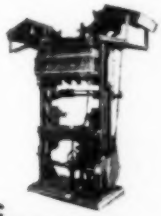

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NM-18

Container Performance Standards

Plan sequence of tests to determine what is allowable damage

That the focal point of interest now in Committee D-10 is the development of performance standards and the correlation of data was evident by the large attendance of members and visitors at the subcommittee meetings which were part of the schedule of ASTM Committee D-10 on Shipping containers at the Hotel Statler, Cleveland, Ohio, on October 4 and 5.

In the Subcommittee on Performance Standards, discussion centered on the establishment of a performance standard on a packaged product. The pertinent point was that the container must be designed to meet the shipping hazard. A task group presented certain premises which were discussed and accepted to govern the work of the subcommittee in this field. For example, it was decided that shipping hazards can be analyzed by using certain tests; size and weight determines how the package will be handled; certain hazards or degrees of hazard are dependent upon the type of transporation; hazards can be simulated by certain ASTM methods, such as the drop, vibration, compression, and possibly the incline-impact test; there should be a sequence of tests and finally performance requiremnts should be set up to determine what is allowable damage.

In the Subcommittee on Correlation of Data a final report was submitted on the round-robin research to evaluate the revolving drum tests. It is the conclusion that this type of test is not reliable for correlation between laboratories but can be used in one laboratory for comparison of specimens. On this basis, no performance standards were recommended at this time dealing with the revolving drum test method. Eighteen laboratories are participating in a round-robin series on the use of the drop test. Concern was expressed over the use of a proper base as part of the equipment for this test, it being pointed out that a very rigid type is required.

The Subcommittee on Methods of Testing took action to advance to standard the Tentative Methods of Testing Large Shipping Cases and Crates (D 1083-50 T). Progress report was presented on a proposed puncture test. A program setup for the next few months involves the use of a magnetic release for dropping of a missile for a measured distance on to plies of a bag which are stretched over a material such as a mound of sand in a 14 in. diameter pail. Data will be presented at the spring meeting of the committee.

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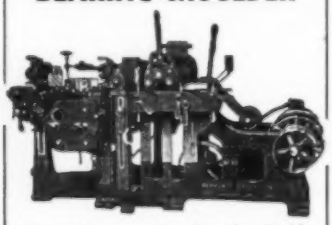

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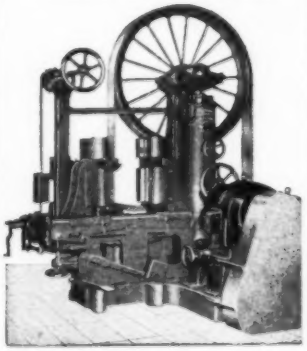

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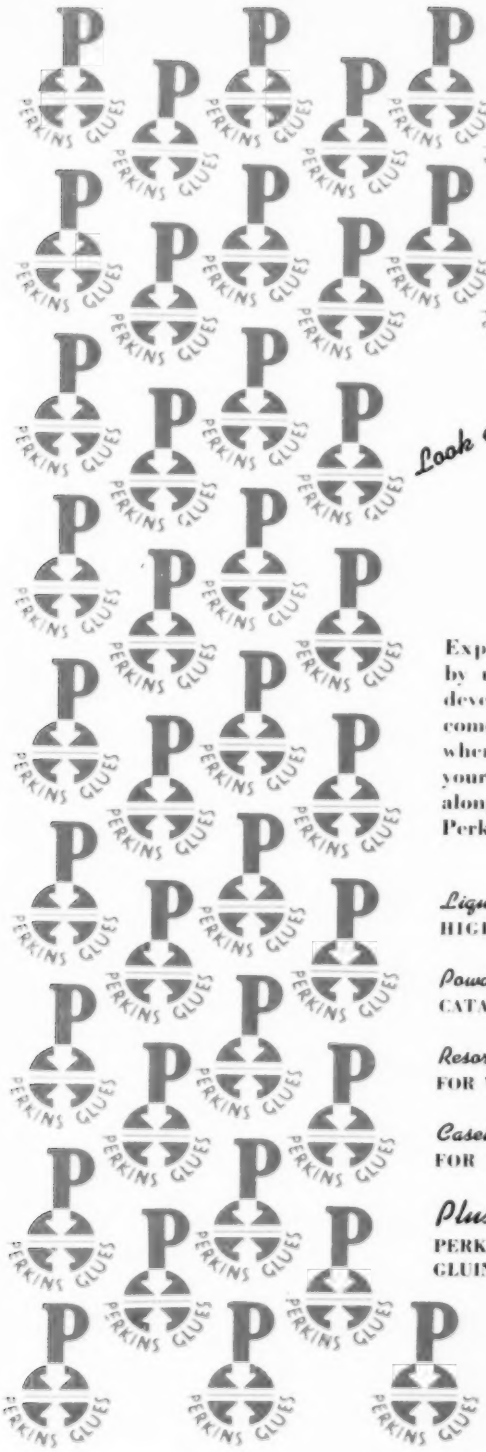

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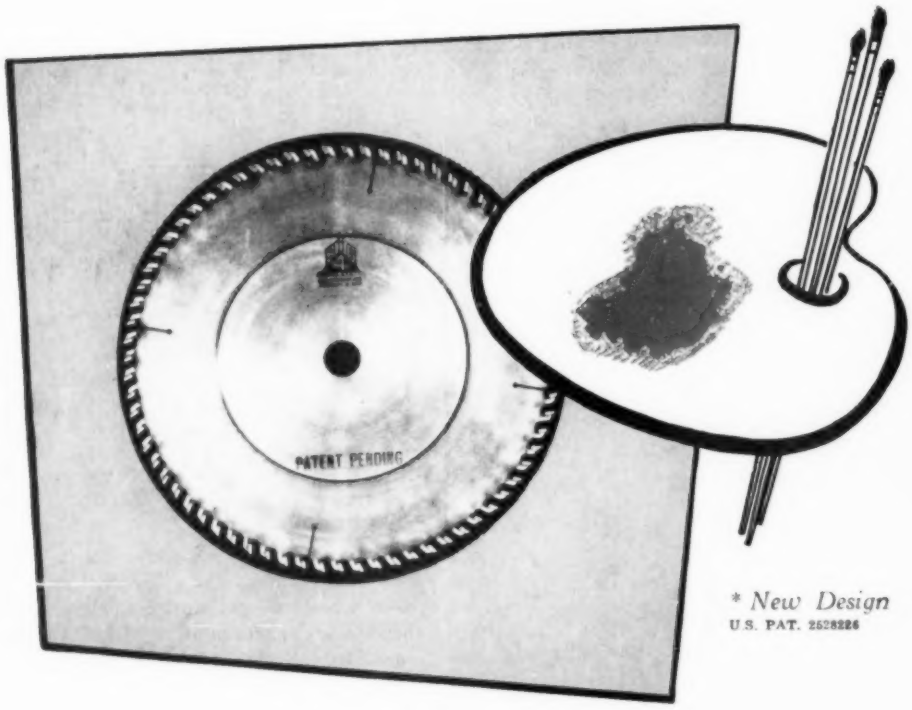

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